

SIMATIC

Process Control System PCS 7 Help for SIMATIC PDM (V8.0)

Operating Manual

Preface	1
Using SIMATIC PDM	2
Installation	3
Integrating devices into SIMATIC PDM	4
Views	5
Functions	6
Menus and dialog boxes in SIMATIC PDM	7
Menus and dialog boxes for SIMATIC PDM in the SIMATIC Manager	8
Menus and dialog boxes for SIMATIC PDM in HW Config	9
Notes, Tips & Tricks	10
Appendix	A

SIMATIC PDM V8.0 ServicePack1

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

with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.

CAUTION

without a safety alert symbol, indicates that property damage can result if proper precautions are not taken.

NOTICE

indicates that an unintended result or situation can occur if the relevant information is not taken into account.

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

1	Preface.....	9
2	Using SIMATIC PDM.....	11
2.1	Introduction.....	11
2.2	Using the documentation.....	11
2.3	Contact partner.....	12
2.4	Basis for using intelligent field devices.....	12
2.5	Establishing connections to field devices.....	13
2.6	Product structure.....	15
2.6.1	Basic packages.....	15
2.6.2	Options.....	18
2.6.3	Delivery contents.....	19
3	Installation.....	21
3.1	Preparing SIMATIC PDM.....	21
3.2	Installing SIMATIC PDM.....	21
3.3	Setting the language.....	24
3.4	Reinstalling / Removing SIMATIC PDM.....	24
4	Integrating devices into SIMATIC PDM.....	25
4.1	Device Integration Manager.....	25
4.2	"Device Integration Manager" main window.....	26
4.3	Views.....	27
4.3.1	Title bar.....	27
4.3.2	Menu bar.....	27
4.3.3	Toolbar.....	28
4.3.4	Device list.....	29
4.3.5	Status Bar (View Menu).....	31
4.4	Working with the Device Integration Manager.....	31
4.4.1	How to integrate a device description.....	31
4.4.2	How to complete a device description.....	33
4.4.3	Update/upgrade of device descriptions (EDD update).....	34
4.4.4	Messages.....	34
4.5	Menus and dialog boxes.....	35
4.5.1	File.....	35
4.5.1.1	Reading in device descriptions.....	35
4.5.1.2	Reading in the list of integrated device descriptions.....	35
4.5.1.3	Save device list as	36
4.5.1.4	Print device list.....	36
4.5.1.5	Deleting the device list.....	36

4.5.1.6	Exit.....	36
4.5.2	Catalog.....	37
4.5.2.1	Complete the device information	37
4.5.2.2	Integrate.....	37
4.5.2.3	Messages	37
4.5.2.4	Find.....	38
4.5.2.5	"Find" dialog box.....	38
4.5.3	? (Help).....	38
4.5.3.1	Help.....	38
4.5.3.2	About.....	38
5	Views.....	39
5.1	Introduction.....	39
5.2	Views in SIMATIC Manager.....	39
5.2.1	Process devices plant view.....	39
5.2.2	Process devices network view.....	40
5.2.3	Open SIMATIC PDM in the Process Devices - Plant View.....	41
5.2.4	Project synchronization.....	41
5.3	Views in SIMATIC PDM.....	42
5.3.1	Main Window "SIMATIC PDM".....	42
5.3.2	Title bar.....	43
5.3.3	Menu bar.....	43
5.3.4	Toolbar.....	43
5.3.5	Structure view.....	44
5.3.6	Parameter table.....	45
5.3.6.1	"Parameter" column of the parameter table.....	46
5.3.6.2	"Value" column of the parameter table.....	46
5.3.6.3	"Unit" column of the parameter table.....	47
5.3.6.4	"Status" column of the parameter table.....	47
5.3.7	Status Bar (View Menu).....	47
5.3.8	Display	48
5.3.8.1	Display in the views.....	48
5.3.8.2	Stand-alone device view.....	48
5.3.8.3	Multiple devices view.....	49
5.3.9	Keyboard operation.....	50
6	Functions.....	53
6.1	Introduction.....	53
6.2	Project editing.....	54
6.2.1	"Settings" for the SIMATIC project.....	54
6.2.2	Setting the interface on the computer.....	57
6.2.3	Plant-wide communication by means of routing.....	57
6.2.4	Checking the device integration.....	58
6.2.5	Print.....	59
6.2.6	Cleaning the project (reorganization)	60
6.2.7	Saving the configuration.....	61
6.3	Device management	61
6.3.1	Inserting devices.....	61
6.3.1.1	How to insert objects.....	61
6.3.1.2	"Insert Object - <...>" dialog box.....	62

6.3.1.3	"Insert Object - Assign Device Type" dialog box.....	63
6.3.1.4	HART device on remote I/O.....	65
6.3.1.5	Compact PROFIBUS device (sensors and actuators).....	67
6.3.1.6	Modular PROFIBUS device (remote I/O).....	69
6.3.1.7	Integrating a device in HW Config.....	70
6.3.1.8	Integrating an FF field device.....	72
6.3.1.9	Inserting a HART device at a HART module.....	73
6.3.1.10	Setting the bus address in HW Config.....	73
6.3.2	Field devices with redundant bus connection	74
6.3.2.1	Connecting field devices to a redundant bus system.....	74
6.3.2.2	"Properties - Select object" dialog box.....	75
6.3.2.3	"Properties - Find object" dialog box.....	75
6.3.3	Using unspecified PROFIBUS PA devices as placeholders.....	76
6.3.4	Creating typicals for parameters (import without ID data)	76
6.3.5	Replacing devices.....	77
6.3.6	Inserting plant-specific documents for process mode.....	78
6.3.7	Operating modes of field devices.....	79
6.3.8	Deleting devices.....	80
6.3.9	Assigning parameters and downloading to devices.....	81
6.3.10	Interconnecting and downloading FF devices.....	81
6.3.10.1	"Interconnection Editor" dialog box.....	81
6.3.10.2	How to download objects in the FF segment.....	83
6.4	Communication.....	85
6.4.1	Saving/reading the device data.....	85
6.5	Export / Import.....	86
6.5.1	Introduction.....	86
6.5.2	How to export project data.....	88
6.5.3	How to import device data.....	89
6.6	Diagnostics.....	91
6.6.1	Field device diagnostics.....	91
6.6.2	Overview of Device Icons.....	92
6.6.3	Connection diagnostics.....	95
6.6.4	Identity check.....	95
6.6.5	Updating diagnostics.....	95
6.7	LifeList.....	96
6.7.1	Working with the LifeList.....	96
6.7.2	"LifeList" dialog box.....	97
6.7.3	"LifeList - Assign address and TAG..." dialog.....	99
6.8	Logs.....	100
6.8.1	Alarm log.....	100
6.9	Graphical displays.....	101
6.9.1	Graphical display of values.....	102
6.9.2	Trend chart.....	104
6.9.3	Bar chart.....	105
6.9.4	Tachometer diagram.....	106
6.9.5	Icons and buttons.....	108
6.9.6	Work with trends.....	109
6.9.7	Editing trends.....	111
6.10	Asset Management.....	113

6.10.1	Asset management	113
6.10.2	Use with the PCS 7 Maintenance Station.....	114
7	Menus and dialog boxes in SIMATIC PDM	117
7.1	"File" menu	117
7.1.1	Save.....	117
7.1.2	Export	117
7.1.2.1	"Export - <Object name>" dialog box.....	118
7.1.3	Import	119
7.1.3.1	"Import - <Object name>" dialog box.....	120
7.1.4	Print.....	120
7.1.5	Exit.....	121
7.1.5.1	"Save changes?" dialog box.....	121
7.2	Editing (depends on device).....	122
7.3	"Device" menu.....	122
7.3.1	Download to device.....	122
7.3.1.1	"Download To Device - <...>" dialog box.....	123
7.3.2	Uploading to PG/PC.....	124
7.3.2.1	"Upload to PG/PC - <...>" dialog box.....	125
7.3.3	Assign address and TAG.....	126
7.3.3.1	"Assign address and TAG..." dialog box.....	128
7.3.4	Object Properties.....	129
7.3.4.1	"General" tab.....	130
7.3.4.2	"Device" tab.....	130
7.3.4.3	"Diagnostics" tab.....	131
7.3.4.4	"Communication" tab.....	131
7.3.4.5	"Document Manager" tab.....	131
7.4	"View" menu	132
7.4.1	Process variables / Measured value display (depends on device).....	132
7.4.2	Start LifeList.....	133
7.4.3	Charts and trends (depends on device).....	134
7.4.3.1	Displaying process variables and measured values	135
7.5	"Diagnostics" menu.....	135
7.5.1	Update diagnostic status.....	135
7.5.1.1	"Update diagnostics - <...>" dialog box.....	135
7.6	"Options" menu (depends on device).....	137
7.7	"Help" menu.....	137
7.7.1	Contents.....	137
7.7.2	Help for device parameters.....	137
7.7.3	About.....	137
7.7.4	Document Manager.....	138
8	Menus and dialog boxes for SIMATIC PDM in the SIMATIC Manager.....	139
8.1	"Edit" menu.....	139
8.1.1	SIMATIC Manager > "Edit" menu.....	139
8.1.2	Object Properties.....	139
8.1.2.1	"General" tab.....	140
8.1.2.2	"Device" tab.....	141
8.1.2.3	"Diagnostics" tab.....	141

8.1.2.4	"Communication" tab.....	142
8.1.2.5	"Document Manager" tab.....	142
8.1.3	SIMATIC PDM.....	142
8.1.3.1	Export	142
8.1.3.2	Import	143
8.1.3.3	Download to device.....	143
8.1.3.4	Uploading to PG/PC.....	144
8.1.3.5	Update diagnostic status.....	144
8.1.3.6	Start LifeList.....	145
8.1.3.7	Device selection (Reassign).....	145
8.2	"Insert" menu.....	147
8.2.1	Inserting an object.....	147
8.3	"View" menu	149
8.3.1	Process devices plant view.....	149
8.3.2	Process devices network view.....	149
8.4	"Options" menu.....	149
8.4.1	Settings for SIMATIC PDM.....	152
8.4.1.1	Settings for SIMATIC PDM.....	152
8.4.1.2	"General" tab.....	152
8.4.1.3	"Communication" tab.....	153
8.4.1.4	The "Download" tab.....	154
8.4.1.5	"Device Integration Manager" tab.....	154
8.4.1.6	"Maintenance" tab.....	156
8.4.1.7	"Service" tab.....	156
9	Menus and dialog boxes for SIMATIC PDM in HW Config.....	159
10	Notes, Tips & Tricks.....	161
10.1	Information on Configuration and Parameter Assignment.....	161
10.2	Transferring data over industrial Ethernet.....	162
10.3	HART applications.....	164
A	Appendix.....	165
A.1	Communication Problems.....	165
A.2	Message window.....	167
A.2.1	"Decision on error" dialog box.....	167
A.2.2	"Error history" dialog box.....	167
A.2.3	"Error" dialog box.....	167
A.2.4	"Multiple errors" dialog box.....	167
A.2.5	"Messages" Dialog Box.....	167
	Index.....	169

Preface

Purpose of the program

SIMATIC PDM (Process Device Manager) is a general-purpose, manufacturer-independent tool for configuration, commissioning, diagnostics and maintenance of intelligent field devices (sensors and actuator) and field components (remote I/Os, multiplexers, control room units, compact controllers).

Purpose of the documentation

This documentation supports you in your work with **SIMATIC PDM** software. You are provided with an overview of the following topics:

- Installing SIMATIC PDM
- Commissioning the software
- Procedures for configuring networks and field devices
- Procedures for commissioning and using the runtime functions.

The documentation is intended for persons working in field engineering who are responsible for configuration, commissioning and plant operation.

Required basic knowledge

General knowledge in the area of field engineering is required to understand this documentation.

Knowledge about the handling of PCs running on Windows operating systems is also required.

Activities using STEP 7 and PCS 7 require corresponding knowledge in the field of automation technology and of SIMATIC S7.

Scope of the documentation

This documentation is valid for the software package SIMATIC PDM V8.0 service pack 1.

Device-specific help

This documentation only covers the basic functionality of PDM. For device-specific information, refer to the documentation of the field device manufacturers.

Readme for SIMATIC PDM

For details of the requirements for using SIMATIC PDM, of special functions, and of the various applications, see file *pdmbase-readme*. You can locate the file as follows:

- On the SIMATIC PDM product DVD in the main folder of the DVD.
- On the SIMATIC PCS 7 product DVD in the folder ...PDM...\PDMBASE\setup.
- After installation of SIMATIC PDM:
 - By selecting SIEMENS SIMATIC documentation in the Windows Start menu
 - The default folder for the file is ...\\SIEMENS\\SIMATIC_PDM\\.

Online Help

The SIMATIC PDM Online Help is a project-specific help feature, which contains the following information:

- **Help for SIMATIC PDM**
The PDF file is an extract of the HTML-based Online Help for SIMATIC PDM. The PDF file does not contain any device-specific information.
- **Device-specific help**
Device-specific information contained in the Online Help is derived from the device descriptions (EDD) of the devices being used:
 - Information on device-specific functions (e.g. available online functions)
 - Help for device-specific menu commands (e.g. trend display options, device-specific display functions and operating functions)

Note

Scope of the device-specific information

The scope of the device-specific information depends on what information can be derived from the device descriptions.

The help system is integrated into the software by way of several interfaces:

- The **Help** menu provides several menu commands: **Help topics** opens the table of contents of the help for SIMATIC PDM.
- The context-sensitive help provides information with regard to the current context such as open dialog boxes or active windows. The help is called by clicking the "Help" button or by pressing the F1 key.
- A tooltip is displayed for the toolbar icons using the "mouse over" function.

If you would prefer to read a hardcopy of the help, you can print specific help topics or chapters, or the entire help.

Using SIMATIC PDM

2.1 Introduction

SIMATIC PDM (Process Device Manager) is a general-purpose, manufacturer-independent tool for configuration, parameter assignment, commissioning, diagnostics and maintenance of intelligent field devices (sensors and actuators) and field components (remote I/Os, multiplexers, control room units, compact controllers). These are simply referred to as devices in the rest of this documentation.

With one software package, SIMATIC PDM enables processing of more than 2500 devices from Siemens and 200 other manufacturers from around the world with an homogeneous user interface.

2.2 Using the documentation

Scope

SIMATIC PDM operates within a SIMATIC STEP 7 / PCS 7 environment or in combination with suitable function modules.

Conventions

The names of the user interfaces in this software are listed in accordance with the regional language of this documentation. If you have installed an MUI operating system, certain designations are still displayed in the base language of the operating system after a language change and will, therefore, differ from those used in the documentation.

2.3 Contact partner

Your contact partner (not for DEMO version)

- Questions on SIMATIC STEP 7 /SIMATIC PCS 7 /hardware/SIMATIC PDM / problems with S7 communication:

Mailing address	SIEMENS AG Customer Support D-90475 Nuremberg, Germany
E-mail:	online-support.industry@siemens.com
Internet	http://www.siemens.com/automation/service&support (http://www.siemens.com/automation/service&support)

- Questions on devices and GSD files:
Please get in touch with your contact partner at the device manufacturer.
See "List of integrated devices". This is available on the "SIMATIC PDM Device Library 1#2012" DVD in the \Manuals directory.
- Post-installations and additional information on SIMATIC PDM are available on the Internet at <http://pcs.khe.siemens.com/pdm> (<http://pcs.khe.siemens.com/pdm>)

2.4 Basis for using intelligent field devices

Integration of field devices from different manufacturers into control systems

Device descriptions had to be standardized In order to enable intelligent field devices from different manufacturers to be integrated into different control systems. This standard (IEC 61804-2) was developed in collaboration with the following organizations:

- PROFIBUS User Organization (PNO)
- Hart Communication Foundation (HCF)
- Fieldbus FOUNDATION (FF)
- OPC Foundation
- Device descriptions are based on EDDL (Electronic Device Description Language - standard IEC 61804-3).

You can obtain device descriptions in the following ways:

- From the device manufacturer together with the device
- From the Internet
- In the device catalogs of applications which can evaluate the data contained in device descriptions

Note**Device descriptions and EDD**

Below, the terms "EDD" (Electronic Device Description) and DD (Device Description) will be referred to as "device description".

However, the terms EDD and DD appear in the user interface.

Liability

Siemens explicitly declines any liability for damages resulting from the use of the following device description files and use in conjunction with the associated devices:

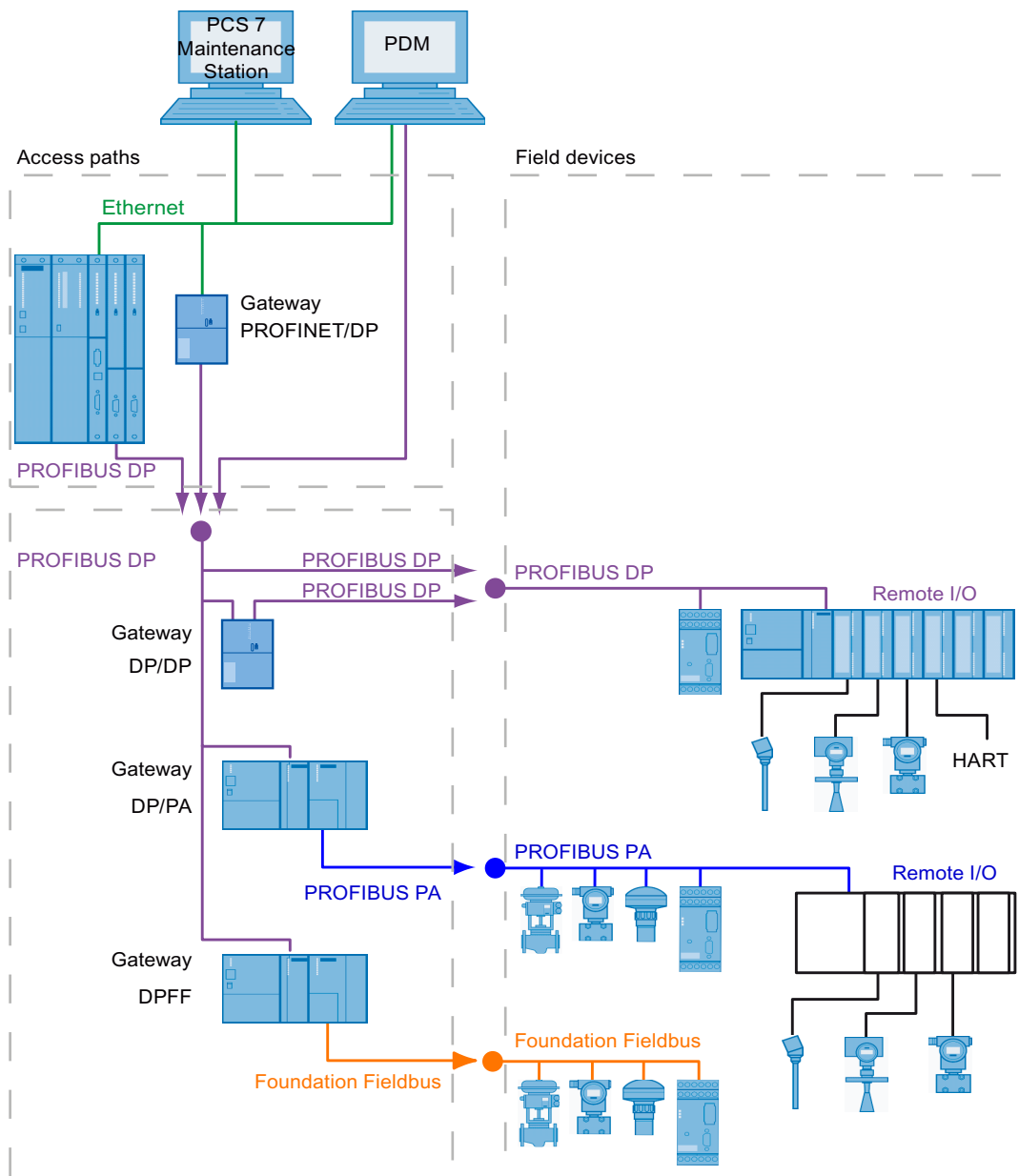
- For device-specific device description files for non-Siemens devices, the Siemens warranty only applies up to the interface.
- For non-device-specific device description files, such as those that correspond to the PROFIBUS PA profiles or the HART universal or common practice commands
- For device description files of the HCF library from the DVD "Device Library ...)"
- For device description files integrated through the import catalog

CAUTION
Important note on the device description files included with the SIMATIC PDM
The device description files of non-Siemens field devices have not been developed by Siemens and are included with the shipped products free of charge. The licensee is entitled to use the device description files of these devices in the same manner as a trial license in accordance with the general terms and conditions for the supply of software for automation and drive technology. This right of use may be exercised by the licensee as long as the right of use for the PDM software is in effect.

2.5 Establishing connections to field devices

Plants use field devices with different communication paths and protocols. The overview shows a typical connection scenario for the field device groups that are supported by SIMATIC PDM.

The following figure shows the access paths to field devices for SIMATIC PDM.



- PROFIBUS DP network (including subordinate Foundation Fieldbus)
- PROFIBUS PA network

Communication paths

Note

Interface with SIMATIC PDM

In the figure below, the PC depicted also serves as the interface with SIMATIC PDM in each case.

In networks with routing capability, the PC can be connected to a linked network. You can find information on this in the section "Plant-wide communication by means of routing (Page 57)".

Activating PDM functions

License keys are required in order to use SIMATIC PDM. You can expand the SIMATIC PDM functions by adding optional packages. You can find information on this in the section "Basic packages (Page 15)".

Additional information

Section "Inserting devices (Page 61)"

2.6 Product structure

2.6.1 Basic packages

The following product packages with different performance features are available for SIMATIC PDM.

Product packages for SIMATIC PDM V8.0

License key	SIMATIC PDM product package	
	STEP 7	PCS 7
SIMATIC PDM Basic and Extended	include	include
Integration in STEP 7	include	include
TAGs	100	100
"SIMATIC PDM Routing (Page 18)" optional package	-	include

Note**Displaying devices subject to licensing**

SIMATIC PDM depicts only devices if a license tag is installed for each devices subject to licensing.

- Licenses are only required for devices that are subject to licensing.
- No licenses are required for remote I/O modules and channels.

Functions in product package

Legend for the following table:

- : Available
- : Optionally available
- : Not relevant
- : Not available

Functions	SIMATIC PDM
	STEP 7 (PCS 7)
Project functions	
• Create online	●
• Create online	●
• TAG options used	●
• Network view	●
• Plant view	●
• Export / import devices	●
• HW Config	●
• Integration in STEP 7	●
• User Manager (SIMATIC Logon)	○
Communication functions	
• PROFIBUS	●
• FOUNDATION Fieldbus	○
• HART SHC mode (communication acceleration)	●
• "HART Long TAG"	●
Device functions	
• Export / import parameters	●
• Use of SIMATIC PDM options	●
• Saving parameters	●
• Log (audit trail)	●
LifeList functions	
• Scan from HW Config	●

Functions	SIMATIC PDM
	STEP 7 (PCS 7)
• Device diagnostics	•
• Define scan area	•

Operating mode "PDM Demo"

The "PDM Demo" version is an operating mode especially for the product SIMATIC PDM. The "PDM Demo" operating mode is activated automatically if necessary licenses are not recognized or functions/options that are subject to licensing are present in a project.

- Necessary licenses for SIMATIC PDM (license keys):
 - PDM Basic
- Functions/options subject to licensing:
 - Communication subject to licensing (HART communication)
 - Options subject to licensing (for example PDM Extended)

Reaction

After starting SIMATIC PDM, you receive a message stating that demo mode is activated. In addition, the status line displays the information "Demo".

Note

License conditions violated

If the license conditions are violated, the following applies:

- The processing of the project with other editors is unrestricted.
 - Objects that are not affected by the infringement of the license conditions can be created.
 - The communication functions are locked.
 - Online dialog boxes of field devices can only be opened "offline".
-

2.6.2 Options

Program Add-ons for SIMATIC PDM

You can purchase the following add-ons for **SIMATIC PDM**:

- **SIMATIC PDM Integration in STEP 7 (PCS 7)**
It allows field devices and their associated networks to be configured using the STEP 7 hardware configurator (HW Config).

Note

The combination of SIMATIC PDM and the option "Integration in STEP 7" is referred SIMATIC PDM integrated in the remainder of this documentation.

- **PDM TAG**
If you want to use more TAGs per project than those provided in the standard package, the TAG options of SIMATIC PDM enable you to use up to an unlimited number of TAGs. The maximum number of devices you can configure increases with several license keys (TAG addition).
Available license keys:
 - 10 TAG
 - 100 TAG
 - 1000 TAG
- **PDM Foundation Fieldbus**
This option lets you use the SIMATIC PDM functions for devices on the Foundation Fieldbus.
- **SIMATIC PDM Routing (Routing via S7 400)**
This option allows you to configure field devices in cases where an automation system serves as the gateway.
- **PDM Extended**
You can use the following additional functions with this option:
 - Import
 - Export
 - Print
 - Document manager
 - LifeList

Additional information

Section "Establishing connections to field devices (Page 13)"

2.6.3 Delivery contents

Scope of delivery

Please consult the file *pdmbase-readme* for information about the software packages that are included with SIMATIC PDM.

Device libraries

For information on the devices contained in the SIMATIC PDM device libraries, refer to the following sources:

- The Internet pages of the device manufacturer
The latest versions of the device libraries and the HCF catalog can be found online.
- on the DVD "Device Library" in the folder **_manuals\PI_Library_Documentation >** in the file "index.html"

Liability

Note

Read the information in the section "Basis for using intelligent field devices (Page 12)".

Installation

3.1 Preparing SIMATIC PDM

Requirement

- SIMATIC PDM is installed.
You can find information about this in the section "Installing SIMATIC PDM (Page 21)".
- Project settings have been made
You can find more information on this in the section ""Options" menu (Page 149)".
- The settings have been made for the fieldbus interfaces.
- Field device planning has been completed.
You can find information on this in the section "Establishing connections to field devices (Page 13)".
- The device description files for the field devices used within a plant have been integrated into SIMATIC PDM. You can find information on this in the section "How to integrate a device description (Page 31)".
- Recommended:
Hardware has been prepared (structure, power supply, network connections)

Additional information

- For additional information on assigning a network, refer to the section "Setting the interface on the computer (Page 57)".
- For information on the particular issues relating to the distributed I/Os, refer to the section "Modular PROFIBUS device (remote I/O) (Page 69)".

3.2 Installing SIMATIC PDM

SIMATIC PDM must be installed before it can be started. The software package contains all SIMATIC PDM software. Depending on the use case in question, you will only need to install certain applications from the CD.

Licensing

In order to use the software you will need product-specific license keys (license agreements), which you install with the Automation License Manager.

You can transfer the required license keys either prior to or following the installation. You can find additional information on this in the Online Help for the Automation License Manager.

Requirements

- The operating system has been installed.
- No version of SIMATIC PDM has been installed.
- All communications processors have been installed in the PC.
- You have administrator rights on the PC station.
- If you install the software in a domain, be aware of group policies or other restrictions that may hinder the installation. Consult the appropriate Administrator as regards these settings and the required approvals and permissions.

Calling the setup program

1. Insert the program CD into the drive.
2. Double-click on "Setup.exe" to start the setup.
Setup starts.

Note

Checking the installation requirements

The setup program automatically checks whether the software components needed for the installation are already installed on the PC.

- Read the latest information about installation and the software and hardware requirements in the *pdmbase-readme* file on the program CD.
 - If any software components are missing, a message informs you of this. The setup program is terminated after the message is confirmed. The setup will start again after you have installed the missing software components.
-

Settings in the setup

Below you will find information on the settings made in the setup dialog boxes, listed in the order in which they are processed:

1. Setup language
 - For example, click "English" and "Next".
2. Welcome
 - ... "Next"
3. Product information
 - ... Read this if needed and click "Next".
4. License agreement
 - ... Activate the check box "I accept the conditions of the licensing agreement as well as the conditions of the Open Source Licensing Agreement".
 - ... "Next"
5. Setup type
 - ... Activate the "Install" check box and "Next".

6. User information

- Enter the user information and click "Next".

7. Installation type

- Package installation
- Custom installation
- You can specify the target folder for SIMATIC PDM.
- "Next"

8. Programs

- The software installed on the PC for this selection is listed in the display window. "Next"

Note**FOUNDATION Fieldbus**

If you wish to configure or monitor devices on a FOUNDATION Fieldbus, you need to activate the "FOUNDATION Fieldbus" option,

9. System settings

System settings are required for problem-free operation of SIMATIC PDM.

Note**Required system settings**

- The settings in the exception list of the Windows firewall are applied to the area of the local network (subnet). If your PC stations are located in different networks (subnets), you need to change this area.
 - The settings in the exception list of the Windows firewall are made when the Windows firewall is disabled.
 - You can open the "Security Controller" dialog box again. To do this, select the following in the Start menu, Siemens SIMATIC programs: **Security > Security Controller**
-

10. Ready to install the selection.

"Install" - The installation is performed.

Close the dialog box when the installation is complete.

11. Reboot the PC.

Device descriptions of field devices used

Following the installation of SIMATIC PDM, integrate the required device descriptions (EDD) for the field devices used.

You can find information on this in the following sections:

- Section "Integrating devices into SIMATIC PDM (Page 25)"
- Section "How to integrate a device description (Page 31)"

3.3 Setting the language

Changing the language

1. Select the SIMATIC Manager command **Options > Customize....**
The "Settings" dialog box opens.
2. Open the "Language" tab. You can change the language on this tab page.
3. Select the language you want to work with in the "National language" field.

Note

SIMATIC PDM language versions

The drop-down list contains the languages included in the SIMATIC Manager installation. If you select a language for which there is no matching SIMATIC PDM language version installed on the computer concerned, "English" is set automatically.

3.4 Reinstalling / Removing SIMATIC PDM

Note

Observe the information on dealing with license keys, which can be found in:

- File *pdmbase-readme*
 - Help for the Automation License Manager
-

Reinstalling

Reinstallation over the top of an existing SIMATIC PDM version is not possible. Remove SIMATIC PDM prior to installing the new version.

Note

Device descriptions

Following a new installation, the required device description must be integrated again.

- The device descriptions included with SIMATIC PDM are available on the "Device Library" DVD.
- You should already be aware of the storage locations for any other device descriptions used.

You can find information about integrating the device descriptions in the section "Integrating devices into SIMATIC PDM (Page 25)".

Removing

To remove SIMATIC PDM, use the Windows system function for removing programs.

Integrating devices into SIMATIC PDM

4.1 Device Integration Manager

The field devices can only be configured if the device descriptions that are suitable for the field devices have been integrated into SIMATIC PDM. The Device Integration Manager is the SIMATIC PDM function for integrating device descriptions.

Liability

Siemens explicitly declines any liability for damages resulting from the use of the following device descriptions and use in conjunction with the associated devices:

- For device-specific device descriptions for non-Siemens devices, the Siemens warranty only applies up to the interface.
- For non-device-specific device descriptions, such as device descriptions that correspond to the PROFIBUS PA profiles or the HART universal or common practice commands
- for device descriptions of the HCF library from the DVD "Device Library ..."

CAUTION

Important information about the device descriptions included with the SIMATIC PDM

The device descriptions of non-Siemens field devices have not been developed by Siemens and are included with the shipped products free of charge. The licensee is entitled to use the device descriptions of these devices in the same manner as a trial license in accordance with the general terms and conditions for the supply of software for automation and drive technology. This right of use may be exercised by the licensee as long as the right of use for the PDM software is in effect.

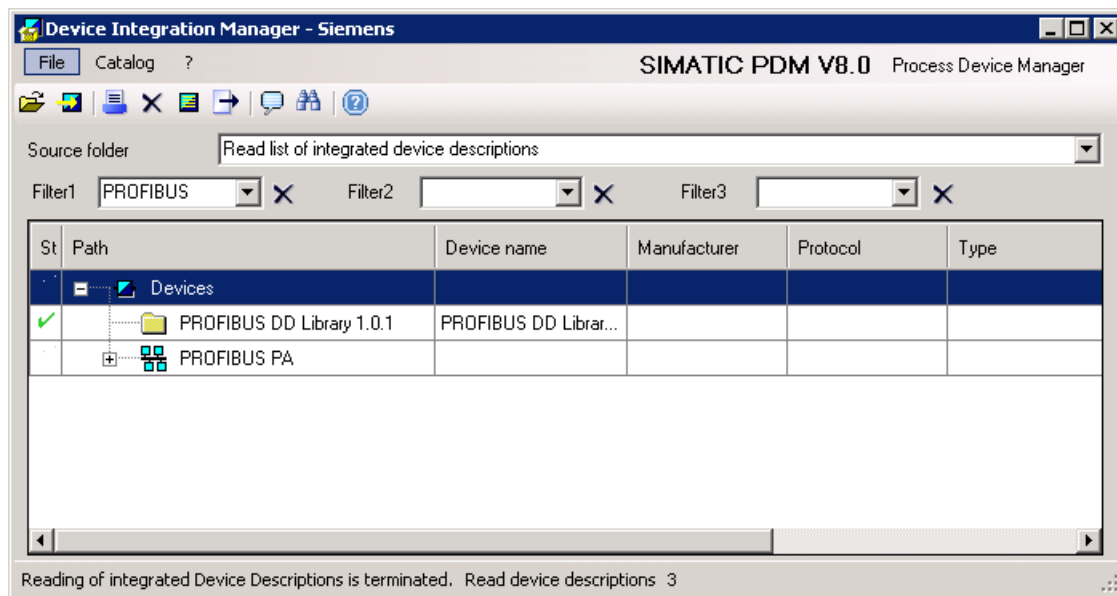
Starting the Device Integration Manager

1. In the Windows Start menu under the Siemens SIMATIC programs, select the menu command **SIMATIC PDM > Device Integration Manager**.
The "Device Integration Manager" dialog opens.
2. Read the license agreement.
You must accept the license agreement in order to be able to work with the Device Integration Manager .
3. Click the "I accept the license agreement" button.

4.2 "Device Integration Manager" main window

Introduction

The "Device Integration Manager" main window remains on the screen throughout the work session and is partially or totally covered by other activated dialog windows.



The main window is structured as follows:

Title bar (Page 27): The product name is displayed here.

Menu bar (Page 27): You can access the functions of the Device Integration Manager via the menu bar.

Toolbar (Page 28): The toolbar enables certain menu commands to be accessed quickly.

Source directory and filters:

- Source directory
The "Source directory" field indicates the storage location in which device descriptions are or were searched for.
- Filters
You can apply filters to reduce the amount of information displayed in the device list.

Device list (Page 29): The device list displays information on devices for which a device description has been found.

Status Bar (View Menu) (Page 31): Contains information on processes currently being performed.

4.3 Views

4.3.1 Title bar

The title bar shows the name "Device Integration Manager".

4.3.2 Menu bar

Structure

Below you will find an overview of the Device Integration Manager menus.

Menu	Submenu	Function
File	Reading in device descriptions (Page 35)	Selecting the storage location of device descriptions to be read in. Set the path to the device descriptions or navigate to the location.
	Reading in the list of integrated device descriptions (Page 35)	Displaying the device list Displays the devices for which a device description is saved on the PC.
	Save device list as ... (Page 36)	Saving the device list Specify the storage location and file name for the file in which you want the device list to be saved.
	Print device list (Page 36)	For printing the device list Select a printer that is available on the PC in the "Print" dialog.
	Deleting the device list (Page 36)	For deleting the devices displayed in the device list Application example: Deleting displayed device descriptions before reading in other device descriptions.
	Exit (Page 36)	Closes the Device Integration Manager.
Catalog	Complete the device information ... (Page 37)	If the software detects that information is missing in a device description during its import, the "Device info incomplete" icon appears in the status column of the device list. If you select an affected device in the device list, you can then complete the device information in a dialog.
	Integrate (Page 37)	The device descriptions for the devices selected in the device list can be integrated into the PDM catalog. Requirement: The check box for the required device is selected in the "Path" column of the device list.
	Messages ... (Page 37)	The "Messages" dialog window opens.
?	Help (Page 38)	Opens the help for SIMATIC PDM.
	About... (Page 38)	The following information is displayed: - SIMATIC PDM version - Information about the "Device Integration Manager" component

Additional information

Use SIMATIC Manager to make the settings for the Device Integration Manager.

You can find information on this in the following sections:

- (Set language:) Section **Options** > "Settings (Page 149)"
- Section **Options** > **SIMATIC PDM** > **Settings** > "Device Integration Manager" tab (Page 154)

4.3.3 Toolbar

The toolbar is located below the menu bar and contains a number of icons with which you can quickly perform frequently used menu commands without having to open a menu and select the command.



Icons

Meanings of the icons used:

Icon	Menu command	Description
	Reading in device descriptions (Page 35)	Selecting the storage location of device descriptions to be read in. Set the path to the device descriptions or navigate to the location.
	Integrate (Page 37)	The device descriptions are integrated into SIMATIC PDM for those devices with the check box selected in the relevant column of the device list.
	Print device list (Page 36)	For printing the device list Select a printer that is available on the computer in the "Print" dialog.
	Deleting the device list (Page 36)	Clearing the displayed device list Application example: Clearing the device list before reading in device descriptions again.
	Reading in the list of integrated device descriptions (Page 35)	Displaying the device list Displays the devices for which a device description is saved on the PC.
	Save device list as ... (Page 36)	Saving the device list Specify the storage location and file name for the file in which you want the device list to be saved.
	Messages ... (Page 37)	The "Messages" dialog window opens.

Icon	Menu command	Description
	Find (Page 38)	Search in the device list displayed The "Find" dialog window opens. Enter a string and define search options.
	Help (Page 38)	Opens the help for SIMATIC PDM.

4.3.4 Device list

The device list in the "Device Integration Manager" dialog window includes a table with information on device descriptions and devices that can be interpreted by a device description by SIMATIC PDM.

Columns

Column	Description	
Status	Status icons The icon may have a different meaning before and after the device descriptions are read in.	
	Icon	Meaning - Status of the device description integration
		After the device descriptions have been read in and before they have been integrated After the device descriptions have been integrated
		Not (yet) integrated
		The device description has been read in without any errors but has not yet been integrated.
		The device description has not been integrated because the user did not select it for integration.
		Device info incomplete
		The device information is incomplete in the imported device description. The device description cannot be integrated correctly. You can find information on correction in the section "How to complete a device description (Page 33)".
		-
		An identical device description has already been integrated.
		An identical version of the device description has already been integrated.
		The device description was not integrated, because an identical version had already been installed.
		The device description is in the process of being integrated.
		-
		The device description has been integrated successfully.
		The device description has been successfully integrated without errors.
		The device description has been successfully integrated without errors. Warnings occurred during the semantic check.
		The device description has been successfully integrated without errors. Errors occurred during the semantic check.
		-
		Errors
		Observe the error details in the message window.
		Errors occurred while reading in the device description. The device description cannot be integrated. For details of the error messages, see the message window
		An attempt was made to integrate the device description. The device description could not be integrated due to an error. • Error messages: For details, please refer to the message window. • Potential cause: Device information incomplete during integration.
		Warning
		Observe the warning details in the message window.
		Warnings generated. The device description has been read in and can be integrated.
		The device description has been integrated. The warnings indicate potential inconsistencies.

Column	Description
Path	Tree structure - Catalog path of the devices for which a device description was found. Select the check boxes for the devices whose device descriptions are to be integrated.
	☒ SIPART P52 To be integrated
	☐ SIPART P52 Will not be integrated, for example, because an identical device description has already been integrated. Note the status icons.
	•  Communication
	•  Folder for device classes (actuator/sensor etc.)
	•  Manufacturer
	•  Device type, Component, Device version
Device name	Device name
Manufacturer	Manufacturer
Communication	Communication type for the connection to the field device.
Device class	Hierarchical name of the device type (e.g. flow sensor)
New version	Version of the device description which was read in from a device description library.
Integrated version	Version of the device description that is integrated in SIMATIC PDM.
Additional information may be displayed. - You can select the columns to be displayed in the SIMATIC Manager using the following menu command: Options > SIMATIC PDM > Settings... - You can find information on this in the section ""Device Integration Manager" tab (Page 154)".	

Sorting

You can sort the contents of the table. Click on the cell in the header of the column based on which the contents should be sorted. Clicking on this cell again changes the sorting direction (ascending/descending).

4.3.5 Status Bar (View Menu)

The status bar is located at the bottom of the main window.

4.4 Working with the Device Integration Manager

4.4.1 How to integrate a device description

The Device Integration Manager is the SIMATIC PDM function for integrating device descriptions.

Device descriptions of the "Device Library" DVD

Make sure the device descriptions are always integrated in SIMATIC PDM from the "Device Library" DVD provided with your version of SIMATIC PDM. Changes in the device descriptions and the catalog structure may exist between the different versions.

Note

FOUNDATION Fieldbus

The SIMATIC PDM option "FOUNDATION Fieldbus" must be installed in order to integrate device descriptions for devices on FOUNDATION Fieldbus.

For information on this, refer to section "Installing SIMATIC PDM (Page 21)"

Upgrading SIMATIC PDM

NOTICE
Checking for all device types used in the project After integrating the device descriptions, you need to check the assignment of the device description (by opening the parameter assignment interface once).

Procedure

1. Close all SIMATIC programs that are open on the PDM computer.
2. Go to the Windows Start menu and select the menu command **SIMATIC PDM > Device Integration Manager** under Siemens SIMATIC programs.
You must accept the license agreement in order to be able to use the Device Integration Manager .
3. Select the menu command **File > Read device descriptions from source ...** .
4. In the tree structure, navigate to the folder containing the device descriptions.
Note on the "Device Library" DVD:
The "Device Library" DVD is supplied with SIMATIC PDM. Select the drive containing the DVD.
 - Click the "OK" button.
The device descriptions found are displayed in the "Devices" list.
You can find additional information on this in the section "Device list (Page 29)".

5. Select the check boxes for the devices whose device descriptions are to be integrated.

Note

Integrating device descriptions for HART devices

If you select a HART device, the HCF library is automatically selected and cannot be deselected.

6. Select the menu command **Catalog > Integrate ...** .
The device descriptions are transferred to the PC.

NOTICE
During the device description integration
Do not open any SIMATIC programs until the device description integration has completed.

Completing the information for a device description

If information is missing from a device description, e.g. regarding the classification, you can add this information yourself. You can find information on this in the section "How to complete a device description (Page 33)".

Additional information

- Section "Delivery contents (Page 19)"
- Section "Messages (Page 34)"
- Section "Checking the device integration (Page 58)"
- Section "Replacing devices (Page 77)"

4.4.2 How to complete a device description

If the software detects that information is missing in a device description during its import, the "Device info incomplete" icon appears in the status column of the device list.



Recommendation:

Each device description marked in this way should be completed before it is integrated in SIMATIC PDM.

Note

Completing device information at a later date

If you need to complete any device information at a later date then please follow the procedure below.

Procedure

1. Select an incomplete device description and then select the shortcut menu command **Complete device information ...**.
Complete the device description.

2. Click "OK".

Note

Saving the changes

- If the device description is located on a read-only medium, changes cannot be made. In this case, copy the device description to a medium that is not write-protected and start the process again.
 - The changes will remain available in the Device Integration Manager until the dialog box is closed. When you click the "OK" button, the changes are applied to the device description.
-

3. Click "Integrate".
The integration of the device description is performed.

Additional information

You can find information on the device list entries in the section "Device list (Page 29)".

4.4.3 Update/upgrade of device descriptions (EDD update)

Basic procedure

1. Check the version of the integrated device descriptions.
You can find information on this in the section "Device list (Page 29)".
2. Read in the new device descriptions and compare the new version to the integrated version.
You can find information on this in the section "Reading in device descriptions (Page 35)".
3. Select the required device descriptions and integrate them.
You can find information on this in the section "How to integrate a device description (Page 31)".
4. Download the configuration to the devices.
You can find information on this in the section "Download to device (Page 143)".

4.4.4 Messages

If errors occur during the actions or in the application of the Device Integration Manager, they are shown in the alarm log.

Additional information

Section "Alarm log (Page 100)"

4.5 Menus and dialog boxes

4.5.1 File

4.5.1.1 Reading in device descriptions

Before devices can be configured in SIMATIC PDM, the associated device description files need to be read in using the Device Integration Manager.

Requirement

You have access to the storage paths of the device description files.

Procedure

1. Select the menu command **File > Read device description files from source**.
In the tree structure, navigate to the storage path where the device description files are saved.
2. Click "OK".
The device description files are read in.

4.5.1.2 Reading in the list of integrated device descriptions

Displaying the device list

Displays the devices for which a device description file is saved on the PC.

Shortcut menu

If you select objects in the list of integrated device descriptions you will find the following via the object-dependent shortcut menu commands below:

- **Messages ... (Page 37)**
Open the alarm log via this menu command.
- **Remove integrated device description(s)**
Delete the selected objects from the list of integrated device descriptions via this menu command.
- **Complete the device information ... (Page 37)**
Open the "Complete device information ..." dialog box via this menu command.

4.5.1.3 Save device list as ...

Saving the device list

Specify the storage location and file name for the file in which you want the device list to be saved.

4.5.1.4 Print device list

You can print the device list that is currently being displayed.

Setting the printer options

Note

Note the following:

- The printer options depend on your computer's operating system and on the printer being used.
 - The file is sent to the default printer.
 - If the printout has more than one page, two periods are printed after the page number in the bottom right corner of the page. The last page does not have these periods, indicating no more pages are to follow.
-

Procedure

1. Select the menu command **File > Print device list** or click the "Print" button.
The "Print" dialog box opens.
2. Select the required options.
3. Click "OK".

4.5.1.5 Deleting the device list

Clearing the displayed device list

Example of application

Clearing the device list before reading in device descriptions again.

4.5.1.6 Exit

Exits the "Device Integration Manager".

4.5.2 Catalog

4.5.2.1 Complete the device information ...

Modifying the information in a device description file

The table below shows the information that can be completed in the "Device Integration Manager" dialog box using the "Complete the device information" function.

Column	Explanation
Device name	You can modify the device name in this input box.
Name of the device version	You can modify the version of the device description in this input field.
Manufacturer	Manufacturer of the field device
Type ID	Identifier for a device type in hexadecimal format You can find information on this in IEC 61804-3.
Device revision	Identifier for a device revision
Communication	Communication type for the connection to the field device.
Classification	Class of the device - name of the object (e.g. TEX flow sensor)
DD revision	Version of the device description file You can find information on this in IEC 61804-3.
EDD	Name of the device version You can find information on this in IEC 61804-3.

4.5.2.2 Integrate

Use the menu command **Catalog > Integrate** to integrate the device description files of the devices into the device catalog of SIMATIC PDM for those devices with selected check boxes in the "Path" column of the device list.

Compiling device description files for SIMATIC PDM

You can find information about the possible settings in the section ""Device Integration Manager" tab (Page 154)".

Remove integrated device description(s)

Section "Reading in the list of integrated device descriptions (Page 35)"

4.5.2.3 Messages ...

The menu command opens the "Messages" dialog box.

Additional information

Section "Alarm log (Page 100)"

4.5.2.4 Find

You can find device description files via the menu command **Catalog > Find**.

The "Find" dialog window opens. Enter a string and define search options.

4.5.2.5 "Find" dialog box

You can find device description files via the menu command **Catalog > Find**.

Settings in the "Find" dialog box

- **Entry field with drop-down list**
You can enter any string. You can search for this string.
- Check boxes
 - **Observe upper and lower case letters**
The writing style of the string entered for an object in the device list is observed.
 - **Compare overall cell content**
The overall string for an object in the device list must match.
 - **Search up**
If this option is enabled, the search begins at the selected point and continues until the start of the device list.
If this option is disabled, the search begins at the selected point and continues until the end of the device list.
- **"Find" button**
The system searches through the displayed device list.

4.5.3 ? (Help)

4.5.3.1 Help

This menu command displays the Help on SIMATIC PDM.

You can navigate to different help topics from the contents page. The "Index" and "Find" functions enable you to display information on specific terms.

4.5.3.2 About...

This menu command displays information about the version and the copyright.

Views

5.1 Introduction

PDM objects are displayed in the following views in SIMATIC Manager:

- **Process devices plant view**
The process device plant view provides an overview of all configured devices in all configured networks.
- **Process devices network view**
The plant topology can be mapped in the process devices network view. The depicted objects are links to the objects in the plant view.
- PDM objects can be configured with HW Config. Open the SIMATIC PDM shortcut menu to assign parameters.
- The network links to the PDM objects are also listed in NetPro.

Working with SIMATIC PDM

License keys are required to use SIMATIC PDM. Information is available in the file *pdmbase-readme.wri*.

Recommendation: Before you assign parameters to a field device with SIMATIC PDM, check whether you can reach the required device.

Additional information

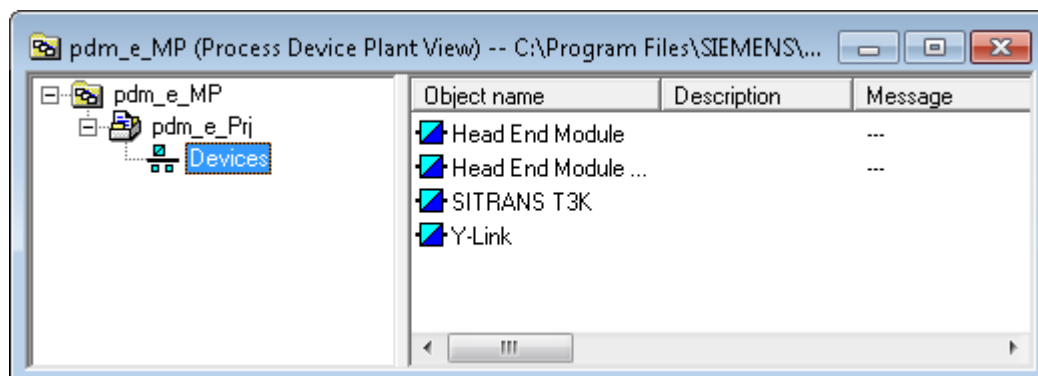
Section ""Settings" for the SIMATIC project (Page 54)"

5.2 Views in SIMATIC Manager

5.2.1 Process devices plant view

In SIMATIC Manager, you call the process device plant view using the menu command **View > Process devices plant view**.

The process devices plant view provides an overview of all configured devices in all configured networks. This view is used to obtain a quick overview of the configured devices. New networks cannot be configured in this view.



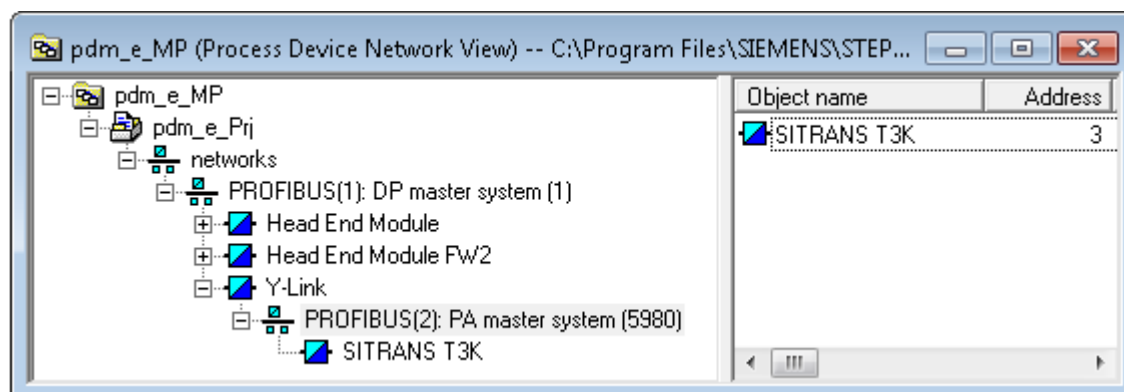
Additional information

Section titled ""Settings" for the SIMATIC project (Page 54)"

5.2.2 Process devices network view

In SIMATIC Manager, you call the process devices network view using the menu command **View > Process devices network view**.

The process devices network view displays the devices in groups according to the network topology. You can configure smaller projects directly in the process device network view, for example, for end-to-end connections between a PC and a device in the factory.



Additional information

- Section titled ""Settings" for the SIMATIC project (Page 54)"

5.2.3 Open SIMATIC PDM in the Process Devices - Plant View

Procedure

1. Select the **View > Process device plant view** menu command in SIMATIC Manager.
The process device plant view opens.
2. Select the "Devices" object in the S7 project.
All available devices are displayed.
3. Double-click the desired object.
The desired object opens in SIMATIC PDM.

5.2.4 Project synchronization

HW Config

In the course of device configuration in HW Config, an image of the plant structure, including all devices which can be configured using SIMATIC PDM, is transferred from HW Config to the process devices network view.

After saving in HW Config, the changes made to the devices are applied in the following views:

- Process device network view
- Process device plant view

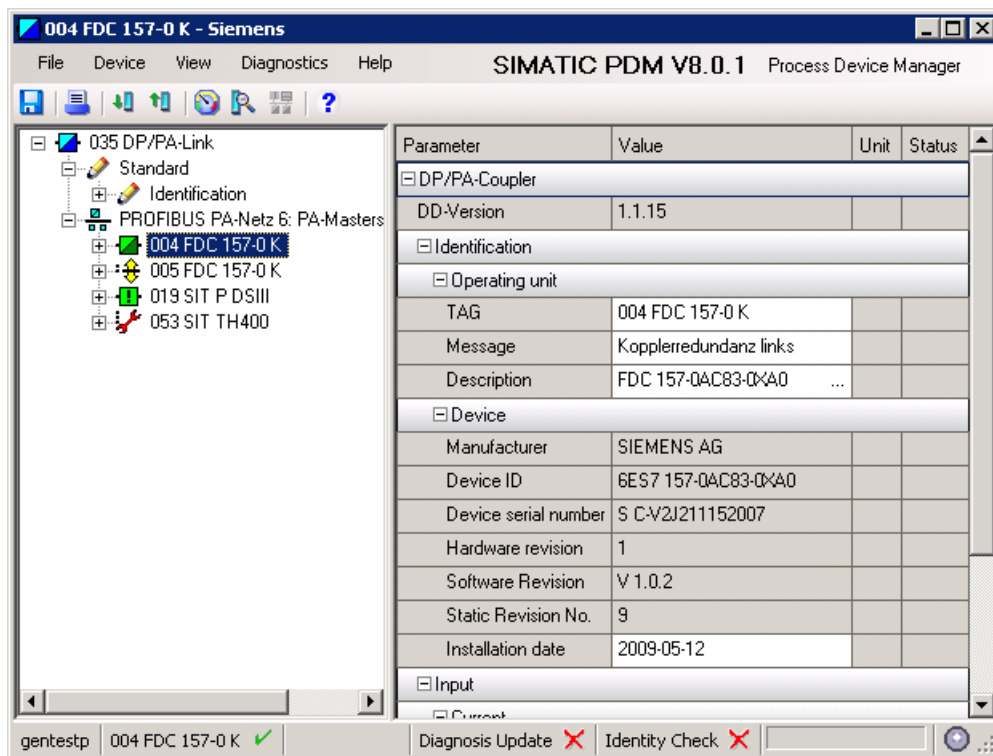
Changes cannot be incorporated into the process devices view if the higher-level objects are linked with HW Config to an existing S7 station.

5.3 Views in SIMATIC PDM

5.3.1 Main Window "SIMATIC PDM"

Introduction

The "SIMATIC PDM" main window remains on the screen throughout the work session and is partially or totally covered by other activated dialog windows.



The main window is structured as follows:

Title bar (Page 43): The title bar shows the project name or the name of the object which was selected before SIMATIC PDM was called.

Menu bar (Page 43): The menu bar can be used to call SIMATIC PDM functions and manufacturer-specific device functions.

Toolbar (Page 43): The toolbar enables certain menu commands to be accessed quickly.

Structure view (Page 44): The objects displayed depend on the object which was selected before SIMATIC PDM was started.

Parameter table (Page 45): The parameters for the object selected in the structure view are displayed in a table.

Status Bar (View Menu) (Page 47): Contains information on processes currently being performed.

5.3.2 Title bar

The title bar shows the name of the object which was selected before SIMATIC PDM was called.

5.3.3 Menu bar

Structure

Below is an overview of the SIMATIC PDM menus.

Menu	Submenu in parameter assignment mode
File	• Save (Page 117)
	• Export (Page 142)
	• Import (Page 143)
	• Print (Page 120)
	• Exit (Page 121)
Device	• Download to device (Page 122)
	• Uploading to PG/PC (Page 124)
	• Assign address and TAG (Page 128)
	• Object Properties (Page 129)
View	• Process variables (Page 132)
	• Start LifeList (Page 96)
	• Trends (Page 134) (depends on device)
Diagnostics	• Update Status (Page 135)
Help	• Contents (Page 137)
	• Help for device parameters (Page 137)
	• About... (Page 137)
	• Document Manager (Page 138)
	• Device manual (depends on device)

5.3.4 Toolbar

The toolbar is located below the menu bar and contains a number of icons with which you can quickly perform frequently used menu commands without having to open a menu and select the command.

SIMATIC PDM mode	Icons
Parameter assignment mode	

Icons

The icons are linked to the following commands:

Parameter assignment mode	Menu command
	Save (Page 117)
	Print (Page 120)
	Download to device (Page 143)
	Upload to PG/PC (Page 144)
	Process variables / Measured value display (depends on device) (Page 132)
	Update diagnostic status (Page 135)
	Start LifeList (Page 96)
	Contents (Page 137)

5.3.5 Structure view

The left-hand section of the main window in the structure view contains a tree structure. The objects displayed depend on the object which was selected before SIMATIC PDM was started.

- If a single field device was selected, it will be displayed in the structure view. You can find information on this in the section "Stand-alone device view (Page 48)".
- If a network or gateway (e.g. DP/PA-Link) was selected, the tree structure is displayed with the associated devices in the structure view. You can find information on this in the section "Multiple devices view (Page 49)".

Icons

You will see the following status icons in front of the objects in the tree view:

Icon	Meaning
	The device has been loaded.
	At least one parameter of the object has been changed.
	The object is already open at another location (window or computer). The object is locked for editing in the current view.
	The object is already open at another location (window or computer). Another user is making changes to the object.
	At least one parameter of the object is defective.

Display

The following are displayed in the structure view:

- Objects with associated parameter groups
- Any available lower-level objects

The selected parameter group is displayed on a blue background. The parameter table shows the parameters of the selected parameter group.

Objects that contain lower-level objects can be identified by the check boxes next to the object icon:

- Check box "+"
- Check box "-"

Note

Generally speaking, the table is only opened down to the structure view.

Move the parameter table in order to view all the general information for a device.

5.3.6 Parameter table

The right pane of the main window is filled by the parameter table.

The parameter table shows a device's parameters in the order in which they are listed in the structure view. Unlike in the structure tree, no hierarchy is displayed here.

Device parameters

The parameters which can be edited depend on the device in question. Fields with a gray background cannot be edited.

Refer to the manufacturer device description for information on how to set the device parameters.

Display of the parameter table

The following columns are displayed in the parameter table:

- Parameter (Page 46)
- Value (Page 46)
- Unit (Page 47)
- Status (Page 47)

Each parameter group starts with a header with the name of the group on a gray background. The indented header text indicates the classification level of the header. The parameter lines are positioned underneath the header.

Operator input

Any entries and changes made must be loaded to the devices in order for them to take effect.

If you click an object in the structure view, the associated parameters are displayed in the parameter table.

Additional information

- Section "Display in the views (Page 48)"

5.3.6.1 "Parameter" column of the parameter table

The names of the individual parameters are listed in the "Parameter" column.

5.3.6.2 "Value" column of the parameter table

This column displays the value of the parameter whose name is in the "Name" (Page 46) column. This can be a numerical value, a physical unit, a status or a designation.

The "Value" box can only be edited if it has a white background. A box with a gray background indicates that the parameter is read-only and cannot be modified or written.

- Right-click on the value to display a list of possible value settings for selection, provided that these value settings are specified in the device description.
- Enter a new value here or select a new setting from the drop-down list box.

Shortcut menu

Right-click inside the parameter table to open one of the following fields:

- An information box is shown for static fields if the cursor is located over a parameter in the "Parameter" column.
Information is displayed to explain the meaning of the field or to explain the associated entry in the "Value" column.
- Selection of values from drop-down lists
The drop-down lists open where you select a corresponding value with the cursor and click on it.
Select the correct setting for your plant- and device-specific conditions.
- Shortcut menu for input boxes

Menu command	Explanations/Operating instructions
Minimum value ...	Displays the minimum permitted value of the parameter. ") ")
Maximum value ...	Displays the maximum permitted value of the parameter. ") ")
Default value ...	Displays the default value of the parameter. ") ")
") Click the value to transfer it to the parameter table.	
") There can be several minimum, maximum and default values.	

5.3.6.3 "Unit" column of the parameter table

The "Unit" column displays the engineering unit of the numerical value present in the "Value" (Page 46) column.

5.3.6.4 "Status" column of the parameter table

The "Status" column displays the status of the parameter whose name is in the "Name" (Page 46) column.

The table below shows the icons that can be displayed here:

Icon	Meaning	Action that can trigger the status
- empty -	Value (Page 46) corresponds to the offline data storage system	Save
	Initialization running or status "OK" <i>Value was never changed</i>	Open new PDM object
	The parameter has been changed by means of operator input, import, or internal methods. <i>Value was changed by user</i>	Edit; dialog boxes
	The parameter could not be converted. <i>Value could not be converted following a change in the unit</i>	Edit
	A parameter's value is defective. <i>An illegal value was detected the validity check (e.g., value too high or too low)</i>	Validity check of value
	The parameter has been successfully loaded. There is no difference between the loaded parameters and configured parameters	- Download to device - Upload to PG/PC
	The parameter cannot be loaded, as a communication error is present. <i>Error message when downloading to the device</i> <i>Error message when uploading to PG/PC</i>	- Download to device - Upload to PG/PC

5.3.7 Status Bar (View Menu)

The status bar is located at the bottom of the main window.

Display

The following information is provided in the status bar:

- Details of user currently working with SIMATIC PDM
- PDM object for which information is currently being displayed in the parameter list
- Diagnostics activated / deactivated

- Identity check activated / deactivated
- Processing status
- Connection status for the object currently selected in the tree structure

5.3.8 Display

5.3.8.1 Display in the views

Operating principle

You can open SIMATIC PDM for a device from SIMATIC Manager or HW Config.

After you open SIMATIC PDM, the table displays the values saved in the project. These values are projected values and default values of the object, which was selected before SIMATIC PDM was started.

All objects for which parameters can be assigned are displayed in the structure view, including the lower-level objects. Only the parameter table of the root object is initially displayed and can be edited (fields on white background).

- Select an object in the structure view; its parameters are then shown in the parameter table, where they can be edited.
-  If an object has already been opened by a different user, a message is displayed to identify the corresponding user and the PC where the object was opened. All fields of the parameter table then have a gray background and cannot be modified.

Note

Changes made to an object opened in SIMATIC PDM only take effect when you select the menu command **File > Save**.

The displays in the status bar and title bar depend on the object you have currently selected.

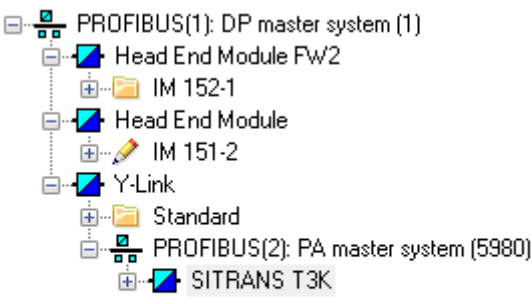
Setting options for SIMATIC PDM

You can find information on this in the section "Settings for SIMATIC PDM (Page 152)".

5.3.8.2 Stand-alone device view

SIMATIC PDM is opened in the stand-alone device view if a device was selected before SIMATIC PDM was started. The device represents the base of the tree in the structure view.

The main window is structured as follows:
Title bar
Menu bar
Toolbar

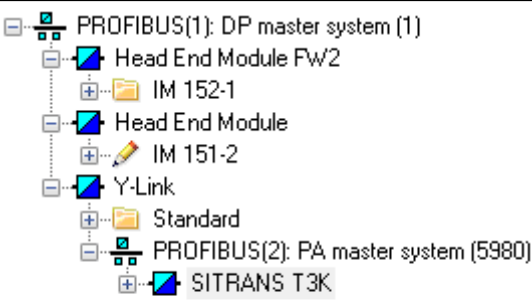
The main window is structured as follows:	
	Parameter table (on the right in the main window)
Status bar	

Additional information

- Section titled "Main Window "SIMATIC PDM" (Page 42)"

5.3.8.3 Multiple devices view

SIMATIC PDM is opened in the multiple device view if an object with lower-level objects was selected before SIMATIC PDM was started, e.g. an ET 200 station with connected field devices. The object represents the base of the tree in the structure view.

The main window is structured as follows:	
Title bar	
Menu bar	
Toolbar	
	Parameter table (on the right in the main window)
Status bar	

Display

When the multiple device view is opened, only the parameter table of the root object is displayed at first. You can edit all the displayed objects and their lower-level objects without opening SIMATIC PDM again.

Additional information

- Section titled "Main Window "SIMATIC PDM" (Page 42)"

5.3.9 Keyboard operation

Key shortcuts

The tables below list the key shortcuts.

Selecting menus via keys

Key shortcut	Function
<CTRL + S>	Save (File menu) (Page 117)
<CTRL + P>	Print... (File menu) (Page 120)
<Alt + X>	For the menu which contains the underscored letter X
Underscored letter in the menu command	Assigned menu command

Key operation in dialog boxes

Key shortcut	Function
<Tab>	To the next input field (left to right and top to bottom).
Arrow keys	Selected in the drop-down list box.
Spacebar	Selects an object or cancels a selection.

Key operation in help programs

Key shortcut	Function
<Alt + F4>	Closes the help window, return to the tool window

Selecting menu commands using shortcut keys

You can execute many menu commands by pressing the associated ALT key shortcut. Press the following keys in succession:

1. <Alt> key
2. The underscored letter of the required menu (e.g. <Alt>, <D> for the **File** menu - if the menu bar contains a **File** command). The menu opens.
3. Letter that is underlined in the desired menu command.
The submenus of the corresponding menu commands will be opened in the next steps.
Repeat these actions until you have selected the entire menu command by typing in the relevant letters.
You trigger the menu command as soon as you have entered the last letter of the shortcut keys.

Example

Menu	Key shortcut
File	<Alt> + <D>
Help	<Alt> + <H>

Functions

6.1 Introduction

Before you can work with SIMATIC PDM, a project containing at least one PDM object must have been created in SIMATIC Manager. In the following, the term "PDM object" is used to refer to those objects that can be configured, have parameters assigned, or be diagnosed with SIMATIC PDM. PDM objects include:

- Field devices
- Remote I/O stations (with/without modules or field devices)
- Networks containing field devices

Information about the creation process

- For information on creating a project, refer to the PCS 7/STEP 7 help.
- For information on creating PDM objects, please refer to the section "Inserting devices (Page 61)".

Requirements for working with SIMATIC PDM

- SIMATIC PDM is installed.
- The necessary license keys are available.
- The device descriptions have been integrated.
- For online functions to work there must be a connection to the corresponding network. You can find additional information on this in the section "Establishing connections to field devices (Page 13)".

Calling SIMATIC PDM

Where	Requirement	Function
SIMATIC Manager • Process device network view • Process device plant view	Project containing PDM object has been created Select object	Edit > Open object
HW Config	Device created	Double-click device

Scope of functions

- Configuration and parameter assignment
 - Integrating field devices into plants and networks
 - Making project engineering settings for and configuring connections
 - Making project engineering settings for and configuring devices
- Mini control and monitoring system for field devices
 - Controlling and monitoring field devices
- Diagnostics
 - Performing diagnostics on field device functions
 - Performing diagnostics on networks
 - Evaluating logs

Hardware configurations

Integration into a SIMATIC project enables you to create SIMATIC stations and field devices in HW Config. You can open SIMATIC PDM directly on the networks and subordinate field devices listed below:

- PROFIBUS DP
- PROFIBUS PA
- FOUNDATION Fieldbus

Assigning parameters and loading

- In the case of offline parameter assignment, data relating to entries and changes made in SIMATIC PDM is saved in the project data. The inputs and changes will only become active after uploading the project data to the device.
- The option for online parameter assignment depends on the device and must be stored in the device description. Entries and changes made in SIMATIC PDM must be loaded into the project.

6.2 Project editing

6.2.1 "Settings" for the SIMATIC project

You will find the following views in SIMATIC Manager after the installation of SIMATIC PDM:

- Process device plant view
- Process device network view

Project settings

The project settings are made in the SIMATIC Manager. These settings apply to the SIMATIC project and SIMATIC PDM.

- Language for the menus and dialog boxes
- Default project view
- Display
- Details in the columns

Project settings

You make the project settings in SIMATIC Manager using the following menu command:
Options > Settings ...

Settings	Tab	
Language selection	"Language" tab	Language displayed in the menus and dialog boxes in the SIMATIC Manager and SIMATIC PDM
Default project view	"View" tab	Start view for the SIMATIC Manager; available views for SIMATIC PDM: • Process device plant view • Process device network view
Details in the columns	"Columns" tab	Views and object types in the parameter table

"Columns" tab

On the "Columns" tab, you can select the columns that you want to be displayed in a PDM view.

Select an object type in the tree structure. Then go to the "Visible Columns" list and activate the check boxes for the entries you want to be displayed for the selected object type.

Object types

- **Type 1** in the tree structure
 - Process device plant view
 - Process device network view
- **Type 2** in the tree structure
 - Process device plant view > **Devices**
- **Type 3**
 - Process device network view > **Networks**

- **Type 4**
 - Process device network view > Networks > **PC**
- **Type 5**
 - Process device network view > Networks > **Communications network**
 - Process device network view > Networks > Communications network > **Object** (on all subordinate levels)

	Visible columns				
Object type	Type 1	Type 2	Type 3	Type 4	Type 5
Object name	Standard	Standard	Standard	Standard	Standard
Picture Name For OS	Standard				
LID		Standard			
Address		x		Standard	Standard
Description	Standard	Standard	Standard	Standard	Standard
Message	Standard	Standard	Standard	Standard	Standard
Device Status		Standard			Standard
Last communication		Standard			Standard
Text1	x	x	x	x	x
Text2	x	x	x	x	x
Text3	x	x	x	x	x
Device		Standard	x	x	Standard
PLT ID		Standard			x
Manufacturer		Standard			Standard
Serial number		x			x
Install date		x			x
Hardware version		x			x
Software version		x			x
Order number		x			x
Object status		Standard			Standard
DD revision		x			x
Author	x	x	x	x	x
Revision date	Standard	Standard	Standard	Standard	Standard
Comment	x	x	x	x	x

- **Type 6**
 - Settings for a multiproject

	Process device plant view (multiproject)	Process device network view (multiproject)
Object type		
Object name	Standard	Standard
Project language	Standard	Standard
UNC path	Standard	Standard
Path to "Computer"	Standard	Standard

	Process device plant view (multiproject)	Process device network view (multiproject)
Object type		
Computer	Standard	Standard
Computer after removal	Standard	Standard
Path after removal	Standard	Standard

See also

Settings for SIMATIC PDM (Page 152)

Menus and dialog boxes for SIMATIC PDM in the SIMATIC Manager (Page 139)

6.2.2 Setting the interface on the computer

Use the interface settings of the project (SIMATIC PCS 7 or SIMATIC STEP 7).

The following interface types are used in SIMATIC PCS 7 and SIMATIC STEP 7:

- PROFIBUS DP interface
- Ethernet interface

Alternative communication channels in the case of redundant S7-400 stations

If SIMATIC PDM signals a connection failure due to a fault in the communication channel, an attempt is made to automatically establish a connection using the redundant S7-400 station via an alternative communication channel.

6.2.3 Plant-wide communication by means of routing**Overview**

In most automation systems, the programming device can only be operated via the bus cable (subnet) connected directly to the automation system. On larger networked plants you must connect the programming device to different bus cables (subnets) before you can go online to a remote automation system.

Routing function

The routing function allows you to reach automation systems online across subnet boundaries from a central point (Engineering Station) with the programming device or PC, in order, for example, to download user programs or a hardware configuration or to perform test functions.

Requirements

The following conditions must be met for S7 routing:

- STEP 7 as of version 5.5 and SIMATIC PDM, i.e. SIMATIC PDM integrated.
- The communication-capable modules (CPUs or CPs) which establish gateways between subnets must support "S7 routing".
- All the automation devices or communications partners that can be reached in a plant network are configured and downloaded within an S7 project.
- The SIMATIC S7 station required is networked and can be reached via the network nodes.
- The last communication interface (CPU, CP) supports the "Dataset gateway" function.
- The modules are downloaded together with the configuration information, which contains the current "knowledge" on the complete network configuration of the project.
Reason: All the modules involved in the gateway must receive information on which subnets can be reached over which routes (routing tables).
- The programming device or PC to which you want to establish an online connection via a gateway is configured in the network configuration and assigned to your programming device.

Additional information

SIMATIC documentation; SIMATIC PDM; pdm-readme

6.2.4 Checking the device integration

You can check in a project whether the required device descriptions are integrated for all objects to be displayed in SIMATIC PDM.

These situations serve as examples for this:

- A project has been copied to the PDM computer.
- Device descriptions have been deleted on the computer.
- A computer has been reinstalled and the device descriptions were not integrated.

Requirement

SIMATIC PDM is installed.

Procedure

1. Open the process device plant view in SIMATIC Manager.
2. Open the "Devices" folder in the tree view.

3. Check whether devices are there that are labeled as follows:

Icon	Meaning	Note
	Deactivated	No device description is integrated in SIMATIC PDM for the device.

4. If deactivated devices have been found, select the menu command **View > Details**.
 5. Check the information in the "Object name" column.

Information in the "Object name" column	Meaning	Further procedure
"TAG" or "Default"	A device description from the device catalog has not yet been assigned to the device.	Assign the required device description to the device. Section "Device selection (Reassign) (Page 145)"
Plant-specific object name	The device description that has been assigned to the device cannot be found or is no longer functional (e.g. accidentally deleted).	Integrate the required device description. Section "How to integrate a device description (Page 31)"

Additional information

- Section "Overview of Device Icons (Page 92)"
- Section "Replacing devices (Page 77)"
- Section "How to complete a device description (Page 33)"
- Section "Cleaning the project (reorganization) (Page 60)"

6.2.5 Print

You can print out the parameter list for a device.

"Print" button



Setting the printer options

Note

Note the following:

- The printer options depend on your computer's operating system and on the printer being used.
 - The file is sent to the default printer.
 - If the printout has more than one page, two periods are printed after the page number in the bottom right corner of the page. The last page does not have these periods, indicating no more pages are to follow.
-

Requirements

- SIMATIC PDM is open.
- In the structure view, an object is selected in the master folder of a device.
You can find information on the structure view in the section titled "Stand-alone device view (Page 48)".

Procedure

1. Select the menu command **File > Print** or click the "Print" button.
The "Print" dialog box opens.
2. Select the required options.
3. Click "OK".

6.2.6 Cleaning the project (reorganization)

PDM objects may be contained in copied SIMATIC projects. If SIMATIC PDM is no longer used in the project, you can remove the requirement for tag licenses in the project using the "Reorganize" function.

Note

SIMATIC PDM must be closed before you use the "Reorganize" function.

The time it takes to perform reorganization depends on the data movement required, and it can be a long time. The function is therefore not carried out automatically (for example, when closing a project).

Procedure

1. In SIMATIC Manager, select the menu command **File > Reorganize**.

6.2.7 Saving the configuration

Changes that are made with SIMATIC PDM are always stored in the SIMATIC project.

You must save the SIMATIC project to save the changes. You must stop SIMATIC PDM before you save an entire SIMATIC project.

(Menu command **File > Save As**).

Procedure

1. Select the menu command **File > Save As** in the SIMATIC Manager.

Additional information

- STEP 7 Online Help
- PCS 7 Online Help

6.3 Device management**6.3.1 Inserting devices****6.3.1.1 How to insert objects**

You can use the "Insert New Object" function to perform the following:

- Create networks, including network components
- Insert objects into a configured network:
 - Insert an individual device or module
 - Insert multiple devices or modules at the same time

Note

This function is only available for the following devices:

- PROFIBUS devices
 - FOUNDATION Fieldbus devices
 - HART devices downstream of a remote I/O
-

Requirements

- The project is open in the process device network view.
- The PDM folder called "Networks" is available in the tree structure.
If the folder structure has not yet been created, select the menu command **Insert New Object** followed by **Networks**.

Note

Licenses for SIMATIC PDM are required for further processing.
Without license keys, you can configure a maximum of four devices (demo mode).

Inserting a network, a master module, modules, and a field device

Follow the steps below to insert objects into higher-level objects one after the other. You will find more information on object types that can be inserted in an object in the section ""Insert Object - Assign Device Type" dialog box (Page 63) "".

1. Select the higher-level object in the tree structure in the window on the left.
2. In the shortcut menu, select the menu command **Insert New Object > Object**.
The "Insert object - <...>" dialog box opens.
3. Make the relevant settings for the inserted object. You can find information on this in the section ""Insert Object - <...>" dialog box (Page 62)"
 - "Object name" input box
 - "<Address>" input box (e.g. PROFIBUS address)
 - "Number" input box
4. Click the "Assign Device Type" button.
The "Insert Object - Assign Device Type" dialog box opens.
You can find additional information on this in the section ""Insert Object - Assign Device Type" dialog box (Page 63)".
5. Select the object to be added from the tree structure.
6. Click "OK".
The objects are inserted.
7. Correct the assigned addresses if necessary.
Please consult section "Setting the bus address in HW Config (Page 73)" for additional information.

Additional information

Section "Device selection (Reassign) (Page 145)".

6.3.1.2 "Insert Object - <...>" dialog box

Make the settings for inserted objects in the "Insert Object - <...>" dialog box.

Setting parameters

You must set the following parameters in order to insert objects:

- **Object name**
Specify the name of the inserted object.
The entered name is the base name when creating several objects.
- **<Address>** (e.g. PROFIBUS address)
(Note: This setting cannot be changed when adding HART devices)
 - Enter the address for the inserted object.
 - If you wish to create multiple objects, enter the first address of the objects to be inserted.
- **Number**
(Note: This setting cannot be changed when adding HART devices)
Adjust the number of objects to be added when adding several objects. Please note that the value depends on the network being used and other factors.
A certain number (n) of objects of one type is created in accordance with these parameters.
The object name is generated as follows:
 - If the number is exactly 1, the address does not appear in the object name that is generated ('<name>').
<name><address>
 - If the number is greater than 1:

PROFIBUS devices and modules	Channels of remote I/O
<address><name>	<name><address>
...	...
<address + (n*-1)><name>	<name><address + (n*-1)>
*: n corresponds to the number of objects to be inserted	

"Assign Device Type" button

The "Insert Object - Assign Device Type" dialog box opens.

Assign a specific object type to the object you want to insert into the project. The possible object types are listed in the tree structure. The object types displayed depend on the location at which an object was inserted.

6.3.1.3 "Insert Object - Assign Device Type" dialog box

Select the device description file of the desired device in this dialog box.

The devices are structured by the device types in a tree structure.

Note

Integrated devices

You can only select devices for which a device description file has been integrated via the Device Integration Manager.

Object types

When assigning objects, select the object type. The following object types can be assigned, depending on the nature of the higher-level object:

Higher-level object	Object to be inserted
PDM "Networks" folder	Communications network As part of the assignment process, select the communications network via which the PDM objects are to be connected.
- Selection: - PROFIBUS DP network - PROFIBUS link - Foundation Fieldbus network	Master module - Selection: - Remote I/O - PROFIBUS Link - PROFIBUS DP device - PROFIBUS PA device - FF Link - FF device
Remote I/O	Modules - Selection: - Module
Modules - Selection: - Module	Field device <HART device>

"Device identification" Button

When you click this button, a connection to the device is established and an attempt is made to read the information from the device. If not all the required information could be read out, only the structures necessary for the device will remain in the tree structure. Make your selection from these structures.

Device identification procedure:

- for PA devices
Select the "PROFIBUS PA" folder and then press the "Device identification" button
- for DP devices
Select the "PROFIBUS DP" folder and then press the "Device identification" button
- for HART devices
Select the "HART" folder and then press the "Device identification" button
- for FF devices
Select the "Foundation Fieldbus" folder and then press the "Device identification" button

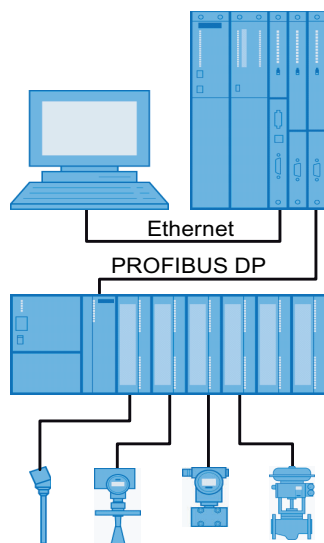
Additional information

- Section "Integrating devices into SIMATIC PDM (Page 25)"

6.3.1.4 HART device on remote I/O

You can connect the HART devices to a suitable remote I/O module.

Remote I/O with HART devices



Creating the PDM basic folder called "Networks"

1. Open the process device network view in SIMATIC Manager.
2. If the "Networks" object has not been inserted in the tree structure, select the menu command **Insert New Object** and select the "Networks" object.

Note

PDM basic folder called "Networks"

SIMATIC PDM licenses must be available in the project when this folder is created.

Creating a communications network

1. Open the process device network view in SIMATIC Manager.
2. Select the "Networks" folder in the tree structure in the left window and select the **Insert New Object > Object command from the shortcut menu**.
The "Insert Object - <...>" dialog box opens.
3. Click the "Assign Device Type" button.

Inserting an object (creating a communications network; remote I/O, module, and HART device)

Follow the steps below to insert objects into higher-level objects one after the other.

Higher-level object	Object to be inserted
"Networks" folder	Type of network via which the field devices are connected to the automation system (e.g. PROFIBUS DP network)
PROFIBUS DP network	Master module (selection: remote I/O)
Master module (selection: remote I/O)	Modules (selection: module)
Modules (selection: module)	Field device (selection: HART device)

1. Select the higher-level object in the tree structure in the window on the left.
2. In the shortcut menu, select the menu command **Insert New Object > Object**.
The "Insert object - <...>" dialog box opens.
3. Apply the following settings to the inserted object.
Please consult the section "How to insert objects (Page 61)" for additional information.
4. Select the object. In the shortcut menu, select the menu command **Object properties**.
The dialog box "<Inserted object properties" opens.
5. Select the "Communication" tab.
6. Apply the following settings to the input boxes:
 - For the remote I/O: Enter the PROFIBUS address.
 - For the module (HART module): Enter the slot.
 - For the HART device: Do not make changes to the channel settings.
7. Repeat these steps until all remote I/O, modules, and HART devices have been added.

Configuring devices with SIMATIC PDM

1. Select the PROFIBUS DP network in the process device network view, which is of a higher level than the added HART devices.
2. In the shortcut menu, select the menu command **Open object**.
SIMATIC PDM opens and the PROFIBUS DP network is depicted in the tree view.
The remote I/O, modules, and HART devices are listed when opening the tree structure.
3. Assign a function individually to the added objects (corresponding with the actual configuration in HW Config and the connected equipment):
 - Open the object by selecting its icon in the structure view.
 - Select the parameters required for the function from the parameter table.
Apply the required settings and save the object.

Note

Objects can be detected automatically if an online connection exists to the devices. The automatic detection of the modules depends on the type of remote I/O, the modules used, and on the device description.

Downloading

The configuration and parameters are transferred by selecting the "<Remote I/O>" object and then selecting the **Device > Upload to PC/PG...** menu command.

Note

Slot function settings

The automatic detection of the <modules> depends on the type of <remote I/O>, the <modules>, and the device description.

Configure lower-level objects

There may be instances where you have to assign a specific device from the catalog to an object before you can configure lower-level objects. You have to start SIMATIC PDM for the object to make the assignment (context-sensitive menu command "Open object").

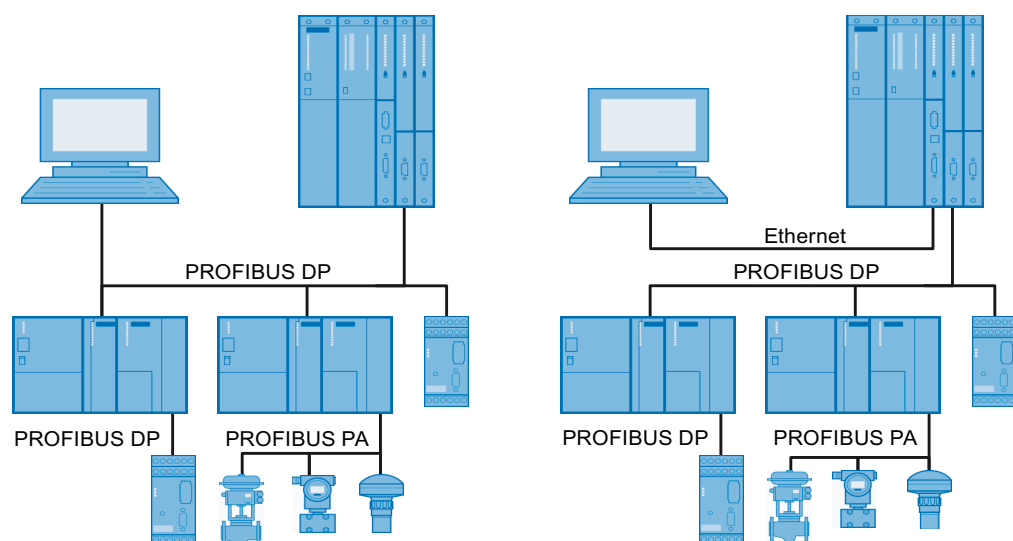
Example:

You insert a remote I/O and assign the respective device to it, for example, an ET 200iSP header module. Then, you configure the remote I/O module. Only after you have assigned a HART-capable module to this module can you insert a channel and a HART device. The pre-defined module "unused slot" cannot include HART devices or channels.

6.3.1.5 Compact PROFIBUS device (sensors and actuators)

Procedure

To integrate a PROFIBUS device (PROFIBUS DP device, PROFIBUS PA device or PROFIBUS remote I/O), proceed as follows:



Creating network

1. Open the process device network view in SIMATIC Manager.
2. Select the "Networks" folder in the tree structure in the left window and select the **Insert New Object > Object** command from the shortcut menu.
The "Insert Object" dialog box opens.
3. Click the "Assign Device Type" button.

Inserting a PROFIBUS device or remote I/O

Follow the steps below to insert objects into higher-level objects one after the other.

Higher-level object	Object to be inserted
"Networks" folder	Type of network via which the field devices are connected to the automation system (e.g. PROFIBUS DP network)
PROFIBUS DP network	PROFIBUS DP device / PROFIBUS PA device
Master module (selection: remote I/O)	Modules (selection: module)
Modules (selection: module)	Field device (selection: HART device)

1. Select the higher-level object in the tree structure in the window on the right.
2. In the shortcut menu, select the menu command **Insert New Object > Object**.
The dialog box "<... SIMATIC PDM – Insert object(s)" opens.
3. In the dialog box that opens, enter the name of the process tag.

Note

Configure the PROFIBUS PA devices directly on the PROFIBUS network if you are using a PROFIBUS DP/PA coupler. The coupler itself does not have to be configured.

4. Alternatively, you can add a PROFIBUS-Link (Y-Link or DP/PA-Link) to a PROFIBUS DP network. Downstream of the PROFIBUS-Link, you can then insert PROFIBUS devices, but not another PROFIBUS-Link.

Note

The address of the PROFIBUS device that you set in the "Insert SIMATIC PDM object(s)" dialog box can also be changed afterwards on the "Communication" tab of the "Object Properties" dialog box.

Configuring devices with SIMATIC PDM

1. Select the inserted PROFIBUS device in the process device network view.
2. Select the **Open Object** command from the shortcut menu.
SIMATIC PDM opens and the PROFIBUS device is shown in the structure view.
3. Set the required parameters for the function in the parameter table.
4. Make the necessary settings and save the object.

6.3.1.6 Modular PROFIBUS device (remote I/O)

Creating network

1. Open the process device network view in SIMATIC Manager.
2. Double-click the "Networks" object in the right window to insert a PROFIBUS DP network.
Select the "Networks" folder in the left window and from the shortcut menu select **Insert New object > Communications network**.
The "Insert Object - <...>" dialog box opens.
3. Click on the "Assign device type" button.
The "Insert object - Assign device type" dialog box opens.
Further information can be found in section ""Insert Object - Assign Device Type" dialog box (Page 63)".
4. Select the PROFIBUS DP network from the tree structure.
5. Click "OK".
The PROFIBUS DP network is inserted.

Adding remote I/O, module, and PROFIBUS device

Follow the steps below to insert objects into higher-level objects one after the other.

Higher-level object	Object to be inserted
PROFIBUS DP network	Master module (selection: remote I/O)
Master module (selection: remote I/O)	Modules (selection: module)
Modules (selection: module)	Field device (selection: PROFIBUS device)

1. Select the higher-level object in the tree structure in the window on the left.
2. In the shortcut menu, select the menu command **Insert New Object > Object**.
The "Insert object(s) - <...>" dialog box opens.
3. Apply the following settings to the inserted object.
Please consult the section "How to insert objects (Page 61)" for additional information.
4. Select the object. In the shortcut menu, select the menu command **Object properties**.
The dialog box "Properties - <Inserted object>" opens.
5. Select the "Communication" tab.
6. Make the necessary settings depending on the inserted object in the input fields:
 - Remote I/O: Enter the PROFIBUS address.
 - Module (device module): Enter the slot.
 - PROFIBUS devices: Do not make changes to the channel settings.
7. Repeat these steps until all remote I/Os, modules, and PROFIBUS devices have been added.

Configuring devices with SIMATIC PDM

1. Select the PROFIBUS DP network in the process device network view, which is of a higher level than the added PROFIBUS devices.
2. In the shortcut menu, select the command **Open object**.
SIMATIC PDM opens. The PROFIBUS DP network is represented in the structure view. You can find the remote I/Os, modules and PROFIBUS devices by opening the tree structure.
3. Assign a function individually to the added objects (corresponding with the actual configuration in HW Config and the connected equipment):
 - Open the object by selecting its icon in the structure view.
 - Select the parameters required for the function from the parameter table.
Make the required settings and save the object.

Downloading

The configuration and parameters are transferred by selecting the "<Remote I/O>" object and then selecting the **Device > Upload to PC/PG...** menu command.

Note

Slot function settings

The automatic detection of the <modules> depends on the type of <remote I/O>, the <modules>, and the device description.

6.3.1.7 Integrating a device in HW Config

Below, you will learn how to insert devices in the project using HW Config:

- Inserting a DP device
- Inserting a DP remote I/O system (distributed I/O)
- Inserting a PA device at a DP/PA coupler
- Inserting a PA device at a DP/PA-Link
- Inserting a PA remote I/O system (distributed I/O)

Requirement

PROFIBUS DP master system

Options for creating the PROFIBUS DP master system:

- In HW Config
If the DP master system is not displayed, select the menu command **Insert > Master system** at the required PROFIBUS module.
- In the process device network view
 - Open the process device network view in SIMATIC Manager.
 - Double-click the "Networks" object in the right window to insert a PROFIBUS DP network. Select "Networks" in the left window, and select the menu command **Insert New Object > Object** in the shortcut menu.
 - Click the "Assign Device Type" button.
The "Insert object - Assign device type" dialog box opens.
You can find additional information on this in the section ""Insert Object - Assign Device Type" dialog box (Page 63)".
 - Select the PROFIBUS DP network from the tree structure.
 - Click "OK".
The PROFIBUS DP network is inserted.

Note

Representation in HW Config

Objects created in the process device network view are **not** displayed in HW Config.

Inserting a DP device

PROFIBUS devices can be inserted directly into the PROFIBUS DP master system.

1. Select the device you require under "PROFIBUS DP" in the hardware catalog and drag it onto the DP master system.

Inserting a DP Remote I/O System (Distributed I/O)

Integration is described based on the example of ET 200iSP .

1. Place the head-end station "IM152-1" you have selected from the hardware catalog under "PROFIBUS DP > ET200iSP" at the DP master system.
The slots of the head-end station are displayed in the detail view in the table below the graphic.
2. You can insert the required analog and digital modules in slot 4 and higher.

Inserting a PA device at a DP/PA coupler

1. Select a device in the PROFIBUS-PA folder of the hardware catalog.
This can be, for example, a SITRANS P pressure transmitter listed under "PROFIBUS-PA > Siemens > Sensors > Pressure > SITRANS P" or a device profile listed under "PROFIBUS-PA > Other".
2. Position it at the PROFIBUS DP master system.
You have to select the device for some objects. You can find information on this in the section ""Insert Object - Assign Device Type" dialog box (Page 63)".

Note

The DP/PA coupler does not need to be configured; you only need to set an appropriate bus transmission rate (for example, 45.45 kbps for the Siemens coupler) for the DP master system.

Inserting a PA device at a DP/PA-Link

1. Place the "IM 153-2" you have selected from the hardware catalog under "PROFIBUS DP > DP/PA-Link" at the DP master system. (The IM 153-2 replaces the IM 157, but both types can be used as PROFIBUS-Link).
HW Config creates a PA master system for the DP/PA-Link .
2. Use drag-and-drop to position the PA devices in this PA master system.

Inserting a PA remote I/O system (distributed I/O)

The integration is described using Pepperl + Fuchs as an example.

1. You find the "RSD-GW-EX1.PA" head-end station in the hardware catalog under "PROFIBUS-PA\REMOTE I/O\PEPPERL+FUCHS GmbH\ P+F I/O System".
Place the head-end station on the DP master system (with DP/PA coupler, see above) or on the PA master system (with DP/PA-Link, see above).
The slots of the head-end station are displayed in the detail view in the table below the graphic.
2. Place one of the modules listed in the hardware catalog under "PROFIBUS-PA > P+F I/O SYSTEM > RSD-GW-EX1.PA" in a free slot.

6.3.1.8 Integrating an FF field device

FF devices can be configured using SIMATIC PCS 7 from PCS 7 version 8.0 Update 1.

Information regarding this can be found in the following documentation:

SIMATIC, Process Control System PCS 7, PCS 7 in practice - FOUNDATION Fieldbus

See also

"Interconnection Editor" dialog box (Page 81)

How to download objects in the FF segment (Page 83)

6.3.1.9 Inserting a HART device at a HART module

The integration procedure is explained using the example of a HART device on an ET 200iSP HART module:

Inserting a HART device based on the example of an ET 200iSP HART module

1. Position an "IM152-1" you have selected from the hardware catalog under "PROFIBUS DP \ET 200iSP" at the DP master system.
The detail view in the table below the graphic object displays the slots of ET 200iSP.
2. Insert a HART module "4 AI 2WIRE HART" from the hardware catalog under "PROFIBUS DP\ET 200iSP\IM 152-1\AI", into a free slot.
The HART module with 4 channels is shown in the detail view.
3. Place the object listed in "...AI\4 AI 2WIRE HART\HART field device" in the detail view.
The PDM dialog "Device selection (Reassign) (Page 63)" opens.
4. Assign the device type to the inserted device (device description).

6.3.1.10 Setting the bus address in HW Config

Make sure the bus addresses of all field devices are entered correctly in HW Config.

Bus addresses can only be set for field devices on a PROFIBUS network.

Procedure

Proceed as follows to edit the settings:

1. Select a field device in HW Config. In the shortcut menu, select the menu command **Object Properties**.
The "Properties - ..." dialog box opens.
2. Click the button for the associated bus system in the "Node/ ...system" area.
The "Properties - ...interface <Field device>" dialog box opens.
3. Enter the desired bus address.
HW Config automatically assigns addresses in the order that objects are created. You may need to correct these addresses, depending on the device used (refer to the device manual).
Click the "OK" button to save the address.
4. Click "OK" to close the "Properties - ..." dialog boxes.
5. Save the project with the menu command **Station > Save**.

6.3.2 Field devices with redundant bus connection

6.3.2.1 Connecting field devices to a redundant bus system

Redundant connection of field devices with SIMATIC PDM

Some field devices allow redundant connection in the automation system. If information about this feature is stored in the device description, SIMATIC PDM can recognize this.

You can determine whether this feature can be configured in the "Properties" dialog box of the process device network view. With these objects, you will see a "Redundancy" area in the "Communication" tab.

Procedure

1. Configure an object for each of the bus addresses of a field device that can be connected redundantly.

Note

Applying the configuration

You only need to configure one object completely (this is referred to as the "master field device" from this point forward).

For the second object, you only need to configure the bus address (this is referred to as the "partner field device" from this point forward). You can display only the master field device on the partner field device. You can find information on this in the section ""Communication" tab (Page 131)".

2. Open the "Object Properties" dialog for the configured master field device in the process device network view.
3. Open the "Communication" tab.
4. In the "Redundancy" section, click "Select Object".
The list of configured devices appears.
5. Select the partner field device.
6. Click "OK".
The list of configured devices closes. The "Enable redundancy" check box is selected in the "Redundancy" section and the partner field device is displayed.

Result

The master is the object at which the substructures are displayed and redundancy can be deactivated again. No substructures are displayed at the partner.

Canceling redundancy

- If the master is deleted, the slave is deleted as well.
- The slave is deleted, the master remains with all substructures. The master loses its master status.

Additional information

- Section ""Properties - Select object" dialog box (Page 75)"
- Section ""Properties - Find object" dialog box (Page 75)"

6.3.2.2 "Properties - Select object" dialog box

Some field devices can be connected to a redundant bus system. Two field device objects are created for these field devices.

If a partner object is created for the selected field device object, you can specify it as partner object in the table.

See also

Connecting field devices to a redundant bus system (Page 74)

"Properties - Find object" dialog box (Page 75)

6.3.2.3 "Properties - Find object" dialog box

Some field devices can be connected to a redundant bus system. Two field device objects are created for these field devices.

The dialog box opens only if a partner object has been specified for the selected field device object.

Note

The partner object is labeled in the table after the dialog box opens.

- The dialog box provides information only.
 - You cannot make any changes in it.
-

See also

Connecting field devices to a redundant bus system (Page 74)

"Properties - Select object" dialog box (Page 75)

6.3.3 Using unspecified PROFIBUS PA devices as placeholders

This method can be used to configure PROFIBUS devices in a system, even though the type of device is not yet set at the time of configuration.

Create a placeholder for unknown devices. You should know the profile of the device to be used as manufacturer information:

Device profiles:

- Profile3
- Profile I&M

Basic preparation

1. Insert a number of objects for PROFIBUS profile devices of the appropriate type at the desired address in the process device network view in a PROFIBUS PA network.
Examples:
 - Sensor > Temperature > PROFILE3 > Profile3
 - Siemens > SIEMENS > Profile I&M
2. Configure the ID data for the PROFIBUS devices in the object properties:
 - TAG
 - Description
 - Message

Commissioning PROFIBUS devices

1. Connect the PROFIBUS devices in the automation system.
2. Select a device configured as a placeholder in the process device network view or in HW Config.
3. Download the configuration to the device (section "Download to device (Page 122)").
4. Assign the required device description to the device (section "Device selection (Reassign) (Page 145)"). Recommendation: Use the "Device identification" function.
5. Where required modify the device's online parameters.
6. Load the data from the device into the configuration (section "Uploading to PG/PC (Page 124)").
7. Repeat steps 2 through 6 until all devices are configured.
8. Save the data in the project.

6.3.4 Creating typicals for parameters (import without ID data)

You can use the following procedure to assign the parameters of an already configured device to identical devices.

Basic procedure

1. Open the process device network view
2. Select a configured device or the network in which the configured devices are located.
3. In SIMATIC Manager, select the menu command **Edit > SIMATIC PDM > Export**.
4. Select the data for export.
You can find information on this in the section "Export ... (Page 117)".
5. Perform the export.
A set of device-specific data is created for each device.
6. Select a device to which new parameters are to be assigned in the process device network view or in HW Config.
7. Select the **Import...** command in the shortcut menu.
The "Import..." dialog box opens.
8. In the "Import file" input box, enter the XML file that contains the data for the required device.
The check for consistent device types is performed.
 - Clear the "Import Identification data" check box.
You can find information on this in the section "Import ... (Page 119)".
9. Click the "Import" button.
The import file data record is not imported in full into the device.
The following data is excluded from import:
 - Device name
 - Description
 - Message

6.3.5 Replacing devices

You have several options for replacing devices with SIMATIC PDM.

Replacement of a device with one of the same type

This type of replacement involves compatible devices.

The device to be replaced can be operated with the device description of the device to be integrated (for example, after a firmware update).

- The configuration can be downloaded to the device you want to integrate.
You can find information on this step in section "Download to device (Page 122)".

Replacement of a device with a similar one

This type of replacement involves incompatible devices.

Parameters for which identical names are entered in the device description are applied in the configuration of the new device.

- You can find information on this in the section "Device selection (Reassign) (Page 145)"

Replacement via address change

Note

Typical service scenario

Manufacturers generally set devices to the service address 126 or deliver them with a user-specific configuration.

This type of replacement involves compatible devices. You can use this function to assign the address of a configured device to a device with the service address 126.

- The device to be replaced can be operated with the device description of the device to be integrated (for example, after a firmware update).
- The configuration can be uploaded to the device to be integrated.

Basic procedure (for PROFIBUS devices and FF devices)

Note

Restart

Changing the address will restart the device.

- **Option 1**

- You apply the "LifeList" function in order to find the replacement device.
- You assign the configuration to the replacement device via the LifeList function "Assign address and TAG ...".

You can find additional information on this in the section ""LifeList - Assign address and TAG..." dialog (Page 99)".

- **Option 2**

- You apply the **Assign address and TAG ...** function for a configured device in SIMATIC PDM.
- In the "Online" area enter the address of the replacement device located in the system (with service address 126).

You can find additional information on this in the section "Assign address and TAG (Page 126)".

6.3.6 Inserting plant-specific documents for process mode

You can assign up to 10 documents to one PDM object in the Document Manager.

To assign the documents, select the menu command **Device > Object Properties > Document Manager**.

To open the documents, select the SIMATIC PDM menu command **Help > Document Manager**. Use the mouse to select the required document from the submenu.

Requirements

The following requirements must be met in order to assign and display documents:

- The documents are stored locally on the PC or are located on a connected network drive (designated by means of a letter).
Connections involving http, ftp, and UNC paths are not supported.
- A display program is assigned to the document type in Windows on the PC.
- The user who wants to open a particular document has read rights to the document (as a minimum).

Procedure

To assign specific documents to a device, proceed as follows:

1. Open the object properties of the device.
2. Select the "Document Manager" tab.
Rows for a maximum of 10 documents are displayed.

Actions on the "Document Manager" tab

Action	To execute
File	1. Click the "..." button. 2. Navigate to the document required. 3. Click "Open". The storage path and file name of the selected file is displayed in the "File" box.
Title	Enter a name for the document.
Test whether a document can be displayed.	Select the menu command Open .
Remove a document from the list	Select the menu command Delete .

6.3.7 Operating modes of field devices

Modes

Each device supports specific, different operating modes which can or cannot be toggled using SIMATIC PDM (depends on the interlock setup of the device).

The following operating modes are available:

Operating mode	Description
Automatic	The device is operating in cyclic mode on an AS master or is ready for this mode.
Manual	The device is still operating in cyclic mode, however, the AS master rejects all additional process values. Working information is transferred "in situ" to the device or by means of a dialog box in SIMATIC PDM.
Simulation	SIMATIC PDM provides a dialog box where you can set up the device as follows: • The default sensor values are valid as output variables and are transferred to the AS master or • The actuation information for actuators is specified by SIMATIC PDM. The reaction is similar to that of "Manual" mode.
Test mode	The test mode represents an extended type of internal simulation in the actual device. For sensors, for example, the actual sensor value is manipulated instead of the output value to the AS master. All calculations generated in auto mode are executed in the device and the device transfers all of its configured diagnostics messages to the AS master.
Failsafe	The device goes into the failsafe mode if an error was detected during acquisition of a process variable.

The diagnostics icon of the device identifies the current operating mode.

Additional information

You can find an overview of the diagnostics icons displayed in SIMATIC PDM in the section "Overview of Device Icons (Page 92)".

6.3.8 Deleting devices

An object is deleted from all the SIMATIC PDM configuration views as soon as you delete it from any of the following views:

- **HW Config**
Devices that have been inserted in a project via HW Config can only be deleted in HW Config (menu command **Edit > Delete**).
- **Process device network view** and **process device plant view**
You can delete devices used once in both process device views. The synchronization between the process device views is done automatically.

Note

Exception of objects used more than once

Objects that can be used more than once (e.g. a device that can be configured with redundancy)

- If you delete an object that has been used more than once from HW Config or the process device network view, it is retained in the process device plant view.
- If you delete in the process device plant view an object used more than once that was inserted in the process device network view, it is deleted from the project.

6.3.9 Assigning parameters and downloading to devices

You assign parameters to devices in the parameter table.

The data relating to entries and changes made in SIMATIC PDM is always created offline (saved in the project data). The data does not take effect in the device until the "Download To Device" function has been performed.

"Download to device" function

Downloads all device variables of a device object from the offline data storage to the devices. You can find information on this in the section ""Download To Device - <...>" dialog box (Page 123)".

Additional information

- Section "Parameter table (Page 45)"
- You will find information on FF devices in the section: "How to download objects in the FF segment (Page 83)" as well as in the *PCS 7 in practice; FOUNDATION Fieldbus* commissioning manual

6.3.10 Interconnecting and downloading FF devices

6.3.10.1 "Interconnection Editor" dialog box

Note

Menu command "Start Interconnection Editor"

This menu command is enabled in HW Config for an FF Link if the "PDM Foundation Fieldbus" license key is available.

You organize the interconnections for internal FOUNDATION Fieldbus (FF) communication in this dialog. The automation system does not participate in this communication. The name of this function is "Control in the field" (CiF). CiF can be used to execute technological functions in an FF segment.

Configure each CiF interconnection (hereafter referred to simply as interconnection) in the "Interconnection Editor" dialog.

Note

Internal device interconnections

FF devices have internal device blocks, such as measuring sensor, controller. The internal device interconnection of these blocks means that there is no communication load on the FF segment.

Structure

The "Interconnection Editor" dialog box is divided into the following columns:

- "Inputs and interconnections" area
 - **"Input" column**
This column shows the FF devices and the available inputs in the network view of the FF segment. Inputs are the target of an interconnection.
 - **"Interconnection" column**
This column displays a list of interconnections that were configured for the FF segment.
Layout: **Output of the FF device > Function Block > Signal**
- "Outputs" area
 - **"Output" column**
This column shows the FF devices and the available outputs in the network view of the FF segment. Outputs are the source of an interconnection.

Buttons

Button	Function
"Add interconnection"	Click this button to add an interconnection to the column "Interconnections".
"Delete interconnection"	Click this button to delete an interconnection.
"Close"	Click this button to close the dialog box. A message informs you if changes were not saved.
"Save"	Click this button to save configured interconnections in the SIMATIC project.

Icons

Icon	Displayed object	
	FF segment	
	FF Link	
	FF device	
	Block within an FF device	
Inputs and outputs		Status
	Analog input	Not interconnected
	Analog input	Interconnected
	Digital input	Not interconnected
	Digital input	Interconnected
	Analog output	Not interconnected
	Analog output	Interconnected

Icon	Displayed object	
	Digital output	Not interconnected
	Digital output	Interconnected

6.3.10.2 How to download objects in the FF segment

You have to download the following data for the function of the FF devices in a system:

- CPU data
 - Hardware configuration of a CPU with connected FF segment (to the CPU)
 - Program and connections (to the CPU)
- Schedule, bus parameters and interconnections (to the FF segment)
- Device parameters (to all FF devices)

Replacing devices

Note that you have several options for replacing devices with SIMATIC PDM.

- Replacement of a device with one of the same type
- Replacement of a device with a similar one
- Replacement via address change

Requirement

You will have to read in the device parameters to the Engineering System before you assign the parameters of the FF devices for the first time.

Note

Observe the following if you have inserted new FF devices on the FF segment or if you want to use parameters of additional function blocks.

- The FF segment is stopped for a short time during download.
- First, you have to configure all the interconnections.
- If required, correct the macrocycle settings.

Note

Downloading function blocks

It is not necessary to download an entire device if there are only minor changes. You can download a group of function blocks or one individual function block for an FF device.

Downloading

Use the following menu commands to download the respective data to the system.

Menu Command	CPU data	Schedule, bus parameters and interconnections	Device parameters
For a CPU with FF Link, you always download the hardware configuration to HW Config. PLC > Download to Module	Hardware configuration is downloaded	Downloading	-
The menu command PLC > Compile and Download Objects... in the SIMATIC Manager.	Program and connections are loading	-	-
In SIMATIC PDM, select the FF Link Device > Download to devices Select the "Object with all subordinate objects and networks" check box in the "Download to devices" dialog.	-	-	All FF devices will be downloaded.
Select the FF device in SIMATIC PDM Device > Download to devices Select the "Object with all subordinate objects" check box in the "Download to devices" dialog.	-	-	The FF device is downloaded

NOTICE

You can download changes to the automation system in "RUN" mode (CIR). The FF segment will always be stopped if the schedule or CiF interconnections will be altered by the download.

Downloading

It is not possible to exclude the FF segment when downloading, e.g. if the configuration in the FF segment was not changed. Follow these steps to disable the download function:

1. Open the hardware configuration in SIMATIC Manager.
2. Open the object properties of the FF Link.
3. In the "Load FF segment" tab, select the "Only load FF Link and FF devices when modified" check box.

NOTICE

Check boxes on the "Download FF segment" tab

Before a complete download of an FF segment, the "Always load FF Link and FF devices" check box must be selected in the "Load FF segment" tab.

6.4 Communication

6.4.1 Saving/reading the device data

The "Download to device (Page 122)" and "Uploading to PG/PC (Page 124)" functions serve to update the data storage system.

- The "Upload to PG/PC" function is used to load all device tags of a device object from the device to the offline database.
- The "Download to devices" function is used to load all device tags of a device object from the offline database to the device.

Procedure

Proceed as follows to load data to the network view, the plant view or the PDM parameter view:

1. Select the device and then select the **Download to devices** or **Upload to PG/PC** menu command from the shortcut menu.
2. Select the settings in the "Download to devices" or "Upload to PG/PC" dialog.
3. Click "OK" to save your entries.

During the loading process, a dialog displays a tree structure similar to that of the SIMATIC Manager that shows the objects you have edited previously. If any errors occur for a device, the function is aborted for this device only. The action continues where possible.

The dialog is updated during the load process. As long as the operation is active, the title bar displays the "In progress" status and the "Result" status after the operation has been completed.

Loading options

Within the configuration layer of the SIMATIC Manager you can download the data of configured devices to the entire plant, to units, or to single devices, or upload this data to the PG/PC without having to open SIMATIC PDM separately for each device.

You have the following options of loading data:

- Downloading to the devices, or uploading to the programming device or PC of the selected device
- Download to the devices, or upload to the programming device or PC of the selected device and of the devices in the root layer under the selected device (only for remote I/O)

Note

At least two connections must be supported simultaneously for remote I/Os to enable communication with the connected HART process devices.

- Download to devices / Upload to PG/PC of the selected device and of all the devices under the selected device

Errors and messages

During the download, all errors and messages are shown immediately. Any errors occurring in a device do not cause the entire action to be aborted; they only apply to the device that is currently being processed. Errors and other messages are saved and can be displayed at a later time.

Suppress message dialogs

You can suppress message dialogs during the download. Select the "Execute load without info dialogs" check box. Further information can be found under the menu command **Options** > **SIMATIC PDM** > **Settings** > The "Download" tab (Page 154).

Loading time

The time required to load the parameter assignment depends on the device in question, so it can take quite some time to load data from multiple field devices.

The total time required for this process depends on the following parameters:

- Number of devices
- Communication mode
- The volume of parameters to be transferred

Note

User action required

In the case of certain devices, loading processes have to be confirmed.

If none of the devices you are using require any action on the part of the user in order to perform the loading processes, you can start the loading process just before you take a long break.

6.5 Export / Import

6.5.1 Introduction

You can export and reimport the configuration and parameter assignment data of projects with PDM objects to a different project or a different PC, for example.

Export

You can export object data from the following environments:

- SIMATIC PDM
- The process device network view in SIMATIC Manager
- The process device plant view in SIMATIC Manager
- HW Config

You can export the configuration and parameter assignment data for the following objects:

- Devices
- Modular devices (e.g. remote I/O stations)
- Networks with subordinate devices

During the export process, export files are created for each device.

**CAUTION**

Note the following:

- PDM objects that are linked to objects in the SIMATIC hardware configuration (HW Config) lose this link during the export.
- Devices with a redundant interconnection are configured multiple times in the network and exported in the same number during the export of a network (you can find information on this in the section ""Properties - Select object" dialog box (Page 75)").

Import

When the data for a PDM object is exported, an XML file is generated for each device. During import, you can match each XML file to a specific device.

Export/import file (*.xml)

During export, the data is saved in an XML file. You can control how the data is formatted by using an HTML format information file (XSL file for transformation into HTML). You can use the HTML format information file (XSL file for transformation into HTML) to convert formats, for example, and to prepare the file for the purpose of using external tools.

The name of each device-specific file generated during export is structured as follows:

<plant-specific device name>\$<date(YYYYMMDD_hhmmss)>.xml

Creating a plant-specific HTML format information file (HTML transformation file)

To create a plant-specific HTML format information file, use the default file as your starting point.

Once you have created devices in PDM, you can find the path and name of the HTML display information file supplied with SIMATIC PDM in the export dialog.

Default setting: <path>\<name>.<file format>

- Path: ...Programme\Siemens\Automation\SIMATIC_PDM\Templates
- Name: PDM<Version>_ExportTransformation
- File format: xsl

Additional information

- Section "Export ... (Page 117)"
- Section "Import ... (Page 119)"

6.5.2 How to export project data

You can run the "Export" function on the following objects:

- Devices
- Modular devices (e.g. remote I/O stations)
- Networks with subordinate devices

Export environment

You can export object data from the following environments:

- SIMATIC PDM
- The process device network view in SIMATIC Manager
- The process device plant view in SIMATIC Manager
- HW Config

Procedure

1. Select a PDM object and choose the associated menu command:
 - The menu command **File > Export...** in SIMATIC PDM.
 - The shortcut command **SIMATIC PDM > Export...** in SIMATIC Manager, in the process device network view or process device plant view.
 - The shortcut command **SIMATIC PDM > Export...** in HW Config.
2. Apply the relevant settings for exporting the device data.
Please consult the section ""Export - <Object name>" dialog box (Page 118)" for additional information.
3. Click the "Save" button.

Result

The configuration and parameterization data for the selected device (or for the devices that are subordinate to the PDM object) is exported.

The progress of the export is shown in the list of devices during the export process. If any errors occur for a device, the entire action is terminated.

Display

The dialog box is updated during the export process.

Status display

- While the process is ongoing, the display field shows the entry "Export: action started".
- Once the process is complete, the display field shows the entry "Export: action completed without error".

Alarm log

Only error and warning entries are made in the alarm log during the export. You can find information on this in the section "Alarm log (Page 100)".

6.5.3 How to import device data

When the data for a PDM object is exported, an XML file is generated for each device. During import, you can match each XML file to a specific device.

Import environment

You can import data from the following environments:

- SIMATIC PDM
- The process device network view in SIMATIC Manager
- The process device plant view in SIMATIC Manager
- HW Config

Device type consistency check

A consistency check of the device types is performed automatically during the import process.

- Imported device
Type of device used to generate the import file
- Existing device (target device)
Type of device that has been selected in the configuration as the target device for the import

The remaining steps depend on the results of the check:

- **Device types are identical**
The import can continue immediately.
The entire import file can be imported to the target object. During import, all the data contained within the import file is overwritten.
- **Device types are different**
The import process is interrupted by the following event dialog box:
"Different device types. Only attributes with the same name are imported."
If you continue the import, the following result is likely:
 - No parameters will be deleted or added.
 - Only those parameters with the same name will be overwritten on the target object.

Note

Assigned device description file

The target device is **not** assigned a new device description file.

Procedure

1. Go to one of the specified environments and select the device for which you want data to be imported from the XML file.
2. Select the relevant menu command in accordance with the environment that you have decided to use:
 - The menu command **File > Import...** in SIMATIC PDM.
 - The shortcut command **SIMATIC PDM > Import...** in SIMATIC Manager, in the process device network view or process device plant view.
 - The shortcut command **SIMATIC PDM > Import...** in HW Config.
3. A dialog box opens. In the "Import file" input box, enter the path and location of the XML file that contains the data you want to import.
The device type consistency check is performed.
4. Select the setting for the "Import identification data" check box.
 - "Import identification data" check box **activated** (default)
The import file data record is imported into the device in full.
 - "Import identification data" check box **deactivated**
The import file data record is not imported into the device in full. The following data is excluded from import:
 - Device name
 - Description
 - Message
5. Click the "Start" button.
The status of the import is displayed while it is in progress. If any errors occur, the entire action is terminated.

Display

The dialog box is updated during the export process.

Status display

- While the process is ongoing, the display field shows the entry "Import: action started."
- Once the process is complete, the display field shows the entry "Import: action completed without error."

Alarm log

The alarm log shows only warnings and errors from the import. You can find information on this in the section "Alarm log (Page 100)".

Additional information

- Section "Replacing devices (Page 77)"

6.6 Diagnostics

6.6.1 Field device diagnostics

Description

SIMATIC PDM provides a detailed diagnostics for integrated field devices.

The device icons are assigned during configuration. When a connection is being established, device-specific diagnostic information is automatically evaluated and classified. The resulting classification is indicated by the corresponding icons. You will find information on the icons in the section "Overview of Device Icons (Page 92)".

This diagnostic information is automatically saved in the project, even if the assigned parameter data are not saved.

When an online connection is being established, an identification check is performed initially. After this, the device status is determined, and the device is depicted with the corresponding icon.

Note

It is possible to disable the diagnostics update.

Diagnostic information

The diagnostics provides the following (categorized) information:

- Communication
 - Communication with the device was good
 - Communication was good, but the device does not support further diagnostics
 - Communication faulty
 - Device assignment error
- Process
 - Device unchecked
 - Device deactivated
 - Measured value alarm
 - Measured value warning
 - Measured value tolerance
- Maintenance
 - Maintenance alarm
 - Maintenance warning
 - Maintenance required

6.6 Diagnostics

- Configuration
 - Configuration error
 - Configuration warning
 - Configuration changed
- Operating mode
 - Manual mode
 - Simulation or substitute value
 - Out of service

Device Status

Note

When checking the status of a device, sometimes the diagnostic information cannot be fully determined because not all devices support the full scope of this function.

Additional information

Section "Identity check (Page 95)"

Section "Updating diagnostics (Page 95)"

6.6.2 Overview of Device Icons

The following table explains the meaning of the possible icons for the devices configured in SIMATIC PDM. The statuses of these icons may not be fully supported by all devices.

The corresponding icons are assigned to the devices during configuration.

The displayed icons are updated as follows:

- When a connection is established to field devices
- When a picture is changed

The diagnostic information is automatically saved in the project, even if the parameter data is not saved.

Display of the icons

The icons are displayed in the following views:

- In SIMATIC Manager
 - Process device network view
 - Process device plant view
- In SIMATIC PDM in the tree structure
- In the LifeList in the tree structure

Icons

Icon	Description
	Deactivated No device description (EDD) from the device catalog has yet been assigned to the field device. / Field device cannot be reached.
	Not validated A device description from the device catalog has been assigned to the field device.
	Communication faulty Communication error; communication has been interrupted or no communication could take place with the device at the configured address. The device cannot provide detailed diagnostic information.
	Assignment error The field device is incompatible with the configured field device or the device has been configured incorrectly. The device cannot provide detailed diagnostic information.
	Maintenance alarm Maintenance is required immediately as there is a device fault.
	Maintenance demanded Maintenance is needed to prevent a possible device fault from occurring. Additional diagnostic information is available.
	Maintenance required Maintenance should be scheduled. No functional restriction has been diagnosed for the field device, service is requested. Additional diagnostic information is available.
	Manual mode There is a communication connection with the field device. The device is in manual mode.
	Simulation mode There is a communication connection with the field device. The device is in manual mode. E.g. the device is in "simulation mode" manual mode.
	Out of service There is a communication connection with the field device. The device is in manual mode. E.g. the device is in "Out of service" manual mode.
	Configuration error Field device fault due to a parameter/interconnection error or configuration error in the hardware components. A maintenance alarm is triggered automatically.

Icon	Description
	Configuration warning Field device warning due to invalid parameters for which substitute values are used. A maintenance request is triggered automatically.
	Configuration changed The parameters set for the device do not match the parameter data saved in the project. Communication with the device is possible to carry out a value comparison or to change parameter settings.
	Unknown diagnostics status Unknown field device status due to invalid parameters for which substitute values are used. A maintenance request is triggered automatically.
	Process value alarm At least one process value has exceeded or fallen below a hardware interrupt limit whose parameters were assigned in the device. Communication with the device is possible.
	Process value maintenance At least one process value has exceeded or fallen below a process warning limit whose parameters were assigned in the device. Communication with the device is possible.
	Process value tolerance At least one process value has exceeded or fallen below a process tolerance limit parameter set in the device. Communication with the device is possible.
	No messages No functional restrictions or diagnostic information known.
	No diagnostic check No functional restrictions known. The field device does not support additional diagnostic information.
	Test mode (background color of diagnostics icon) The device is in local test mode. All the displayed information or diagnostics may be simulated. The information transferred to the automation systems (measured values and status) may also be simulated.

Icons for FF device blocks

The icons for FF device blocks are based on the device icons.

Icon	Description
	FF block icon
	The block icon is a device icon expanded by the block character. It has an equivalent meaning. Example: FF block not functional (Out of service)

6.6.3 Connection diagnostics

Description

When you establish an online connection to a device in SIMATIC PDM, the following points are checked while the connection is being established:

- Device type
- Device (TAG)
- Changes made to the device that have not yet been saved in the project

If a connection is aborted, SIMATIC PDM automatically attempts to establish a new connection. Any errors that occur are displayed and logged.

If a device has not accepted the data in an identical manner, the values that are written to the device and the actual values read back from the device can be displayed.

You can then decide whether or not to use the changed values in your project.

Additional information

- Section "Overview of Device Icons (Page 92)"
- Section "Communication Problems (Page 165)"

6.6.4 Identity check

The identification check verifies consistency between the connected and the configured device. The scope of the identification check depends on information derived from the device description of the respective device.

Note

Once the identification check is complete, the device status is determined and a corresponding icon is assigned to the device.

If the identification check determined a difference between the connected and the configured device, an informational dialog is depicted listing information about the connected and configured device.

6.6.5 Updating diagnostics

If online communication with the currently selected object is established, SIMATIC PDM is able to carry out a device diagnostic of the field devices.

Enabling device diagnostics

1. Select the **Options > SIMATIC PDM > Settings** menu command in SIMATIC Manager.
The "Settings" dialog opens.
2. Select the "Communication" tab.
3. Activate the "Diagnosis Update" check box in the "Device diagnostics" area.

See also

"Communication" tab (Page 153)

"Update diagnostics - <...>" dialog box (Page 135)

Overview of Device Icons (Page 92)

6.7 LifeList

6.7.1 Working with the LifeList

Introduction

LifeList makes it possible to identify active field devices without configuration. With LifeList , you perform a scan on one of the following PDM objects:

- PROFIBUS DP network
- PROFIBUS PA network
- Foundation Fieldbus network

Note

Scanning a network

The selected network is analyzed during a scan with LifeList . A separate scan is required for subordinate networks.

Starting LifeList

If the project is opened in SIMATIC Manager, you can start LifeList from the following views:

- **Starting from HW Config**
 - Select a PDM object containing the field devices.
 - Select the shortcut menu command **SIMATIC PDM > Start LifeList** .
SIMATIC PDM starts. LifeList is opened.
- **Starting from the process device network view**
 - Select a PDM object containing the field devices.
 - Select the menu command **Edit > SIMATIC PDM > Start LifeList** .
- **Starting from SIMATIC PDM**
 - Requirements: A PDM object containing the field devices is selected.
 - To open the LifeList , select the menu command **View > Start LifeList** .

Stopping LifeList

When the LifeList is open, click "Close".

LifeList via Ethernet routing

The following requirements have to be met to apply the LifeList to objects via Ethernet routing:

- An S7 hardware project can communicate with the automation system via HW Config.
- The hardware project has been downloaded to the automation system along with the corresponding PROFIBUS-Link .

If these conditions are met, communication can be established via Ethernet routing with networks of the following types:

- PROFIBUS DP network
- PROFIBUS PA network
- FOUNDATION Fieldbus via FF Link at PROFIBUS DP

You can find information on the required hardware in the file *PDM-readme*.

6.7.2 "LifeList" dialog box

Start or update LifeList

The LifeList for the selected PDM object is not determined automatically. You start to create or update the LifeList for the PDM object via the "Start" button.

LifeList data

The following data can be displayed in the LifeList :

- Available nodes
- Address
- ID number
- Manufacturer
- Device type
- Device revision

Scan operation procedure

1. The object selected before the LifeList dialog starts is displayed in the table.
 2. You start to create the LifeList for the PDM object
 3. The addresses of the devices that are subordinate to the PDM object are ascertained.
 4. The available data are requested and displayed in succession for all allocated addresses.
- You will find information on the icons in the section "Overview of Device Icons (Page 92)".

Terminate scan and start again

If you terminate the scan and start again the table is deleted and is created again.

Errors and warnings

If the scan has completed then errors and warnings are provided in the alarm report. If you want to view all messages, click "Alarm log (Page 100)".

"Assign tag and address" button

You can assign new addresses and device names to one of the following devices via this button:

- PROFIBUS field devices
- FF field devices

You can find information on this in the section ""LifeList - Assign address and TAG..." dialog (Page 99)".

6.7.3 "LifeList - Assign address and TAG..." dialog

If the LifeList was found, you can perform the following action in the "LifeList - Assign address and tag..." dialog" for the device displayed in the "Online" area:

- Change object name
- Change address
- Change object name and address

Buttons

Button	Function
Select object	Select this button in the following cases: • You want to assign an existing device configuration to a replacement device with default address. • You want to assign an existing device configuration to an unspecified device.
Transfer	You can only select this button if changes were made in at least one input box and both input boxes were selected. The information in both boxes is identical if the operation was successfully completed (status "Transfer successful").
Reset address (only available for FF devices)	• The "Reset address" button is only available for FF devices. • The function "moves" the device to the area for temporary FF devices (reserved address range for FF devices - addresses 248 to 251). The name (TAG) remains unchanged. • You can verify execution with LifeList .

Note

Restart

Changing the address will restart the device.

Note

Address or name (TAG) occupied

If the address or name (TAG) is occupied, then the action will not be performed. A corresponding message will be displayed.

Device information

The following data is displayed in this area for the detected device (online) and the new settings:

- Manufacturer
- Device type
- Device revision

See also

"Assign address and TAG..." dialog box (Page 128)

6.8 Logs

6.8.1 Alarm log

Information about events in SIMATIC PDM are displayed in the alarm log.

Events in the alarm log

The alarm log contains information on the following events:

- Events in online dialogs
- Events when executing "Upload to PG/PC..." and "Download to devices..."
- Events when executing "Update diagnostics"
- Events when executing the LifeList
- Events when executing Export and Import
- Events in Device Integration Manager

Note

Device-specific log functions

The device description is used to determine which events are logged and which log entries are displayed in the alarm log.

Alarm log

The alarm log contains the following columns:

- Index
- Date and time
Displays the date and time in UTC format modified by the local time difference.
YYYY-MM-DD HH:mm:ss +/-HH:mm
- Message class
- Context
- Message

Filter alarm log

You can filter the events shown in the alarm log according to the following categories. Select one of the following settings from the drop-down list:

- **Without filter**
All information is shown.
- **Errors only**
Only errors are shown.
- **Errors and warnings only**
Only warnings and errors are shown.

File saving and formats

You can save the alarm log in CSV format (*.csv).

6.9 Graphical displays

Note

Functions for the graphical display of values are available in SIMATIC PDM, if they are provided by the manufacturer of the device description.

Chart dialog window

When working with field devices, please note that:

- The following cannot be changed:
 - The contents of the chart dialog window
 - Process values
- If the device description can be edited, you can use SIMATIC PDM to change the following data in the chart dialog window:
 - Variables
 - Constants

Functions and possible representation

The following functions can be displayed by SIMATIC PDM:

- Monitoring process values
- Monitoring measuring signal raw values
- Monitoring status or wear values inside the device
- X-Y trends, e.g. envelope trends for radar level gauges

6.9 Graphical displays

- Trends (for multiple process variables, measured values)
- Calibration functions
- Zero point settings
- Min/max pointer
- Diagnostic states
- Restore factory settings
- Mode changes
- Online parameter assignment
- Simulation of process variables, statuses, and diagnostics messages
- Classification of device-specific diagnoses

Additional information

- IEC 61804-2
- IEC 61804-3

6.9.1 Graphical display of values

Online functions

The following is defined in the device description with regard to online functions:

- Process variables and measured values that can be visualized or used online
- Type of display and content of the online dialogs
- Possible online operations

The values and parameters appear on standardized online displays, which are coordinated with different functions.

Note

Online functions are active (time running)

If a function accesses online values then an animated clock icon is shown in the title bar in the online dialogs.

Displaying information in the chart

Device description files can include the following information on displaying values/parameters in charts:

- Source of values/parameters
- Chart type
- Value ranges

Charts for process values

- Trend chart (Page 104)
Multiple values/parameters can be displayed in a chart at the same time.
 - y-t charts
- Tachometer diagram (Page 106)
Each value/parameter is displayed in a separate chart.
- Bar chart (Page 135)
Multiple values/parameters can be displayed in a chart at the same time.

Trend chart for variables and constants

Multiple variables/constants can be displayed in a chart at one time.

- Trend chart (Page 104)
Multiple variables/constants can be displayed in a chart at one time.
 - y-t charts
 - x-y charts

The following data is displayed:

- Online values
- Data from files
- Data read from the device

Trend chart for digital values

Digital values can be shown in a trend chart.

The representation of the values depends on the device description.

Additional information

- Section "Charts and trends (depends on device) (Page 134)"
- Section "Displaying process variables and measured values (Page 135)"
- IEC 61804-2
- IEC 61804-3

6.9.2 Trend chart

The following may be displayed in the trend charts:

- Display of several trends
- Display of one x axis and several y axes
- Display of one y axis with several trends

The way in which trends are displayed is derived from the device description:

- Trend colors
- Visual highlighting of individual trends (e.g. line width)

y-t chart

In y-t charts, the trends are updated incrementally.

The following display modes are usually used:

- Automatic scrolling along the time axis
- If the trends have reached the right-hand margin, they continue to be recorded starting from the left again, and the old trends are overwritten one after the other
- If the trends have reached the right-hand margin, the trend display is cleared and the trends start again from the left

x-y chart

The way in which information is displayed with x-y charts depends on the specifications in the device description. The following displays are typical:

- Representation of static trends
- Representation of parameters which change upon certain events (e.g. change of parameters)

Display mode

The trend display mode can be selected in the trend charts by using the toolbar that is available in the "Display mode" drop-down list.

Modes:

- **Strip**
 - The most recent value is always shown on the far right of the chart.
 - The user can change the length of the time interval.
- **Scope**
 - The time axis shows a defined time interval.
 - The first value for the current time interval is always shown on the left-hand side of the chart. The subsequent values are always assigned to a time that falls within the time interval shown. The final value for the time interval that is being displayed is always shown on the right-hand side of the chart.
 - As soon as a time interval expires, the displayed values are deleted.
 - The first value for the subsequent time interval is always shown on the left-hand side of the chart.
- **Sweep**
 - The time axis shows a defined time interval.
 - The first value for the current time interval is always shown on the left-hand side of the chart. The subsequent values are always assigned to a time that falls within the time interval shown. The final value for the time interval that is being displayed is always shown on the right-hand side of the chart.
 - The values that are displayed in the chart get overwritten by the values for the subsequent time interval.
- **Static**
 - The time interval is not updated.
 - The user can change the displayed range however he or she likes.
 - Recommendation:
Use this display mode to display static values.

6.9.3 Bar chart

Note

Functions for the display of process variables and measured values are available in SIMATIC PDM, if they are provided by the manufacturer of the device description.

Process variables and measured values are displayed in bar charts. A bar chart always shows current values.

The following may be displayed in the bar charts:

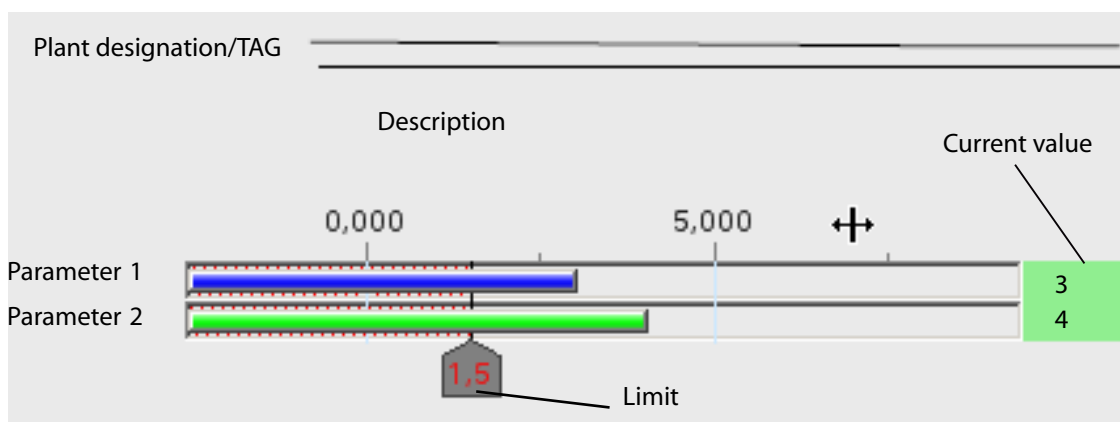
- Name of the chart
- Names of the variables
- Limit (for the warning range)

Note

The value range of the axis can be moved with the mouse.

Example

The figure below shows an example of a dialog window with a bar chart.



Additional information

- Section "Trend chart (Page 104)"
- Section "Tachometer diagram (Page 106)"
- Section "Icons and buttons (Page 108)"
- Section "Work with trends (Page 109)"
- Section "Editing trends (Page 111)"

6.9.4 Tachometer diagram

In SIMATIC PDM, only one value is displayed in a speedometer chart.

Limits can be assigned to the displayed value. These are highlighted in color in the chart.

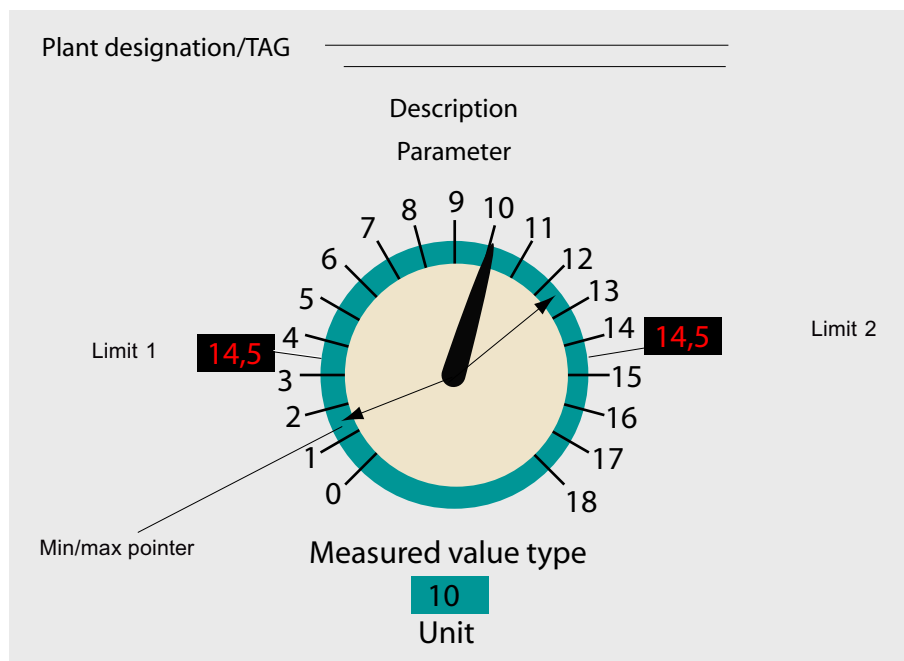
Chart

The chart can show the following elements:

- Name of the chart
- Inscription for the speedometer
- Name of the variable
- Min/max pointer (marks the maximum or minimum value reached since the start of monitoring)
- Warning ranges (represented by hatching)
- Limit (for a warning range)
- Current value (represented as a needle on the speedometer and as a numeric value below the speedometer)
- Inscription of the axis
- Unit

Example

The figure below shows an example of a dialog window with a speedometer chart.



6.9.5 Icons and buttons

Icons and buttons on the toolbar

Icon	Description
	Zoom in horizontally Use the "Zoom in" button to enlarge the trend area.
	Zoom out horizontally Use the "Zoom out" button to make the trend area smaller.
	Zoom in vertically Use the "Zoom in" button to enlarge the trend area.
	Zoom out vertically Use the "Zoom out" button to make the trend area smaller.
	"Display mode (Page 104)" - Allows you to set the trend display mode • Strip • Scope • Sweep • Static
	Trend Manager - Allows you to make settings for the trends and markers shown • You can use the check box in the "Trend Manager" drop-down list to hide/show trends. In the legend, hidden trends are grayed out. • Each trend is automatically assigned a marker (trend symbol) with its own color and appearance. You can use the check box to hide/show the marker. • An editable trend is always selected via the Trend Manager.
	Export Trends can be exported in .csv file format.
	Import Once a trend has been exported, the resulting .csv file can be imported. Imported trends are shown with their own x and y axes. To allow an imported trend to be compared with recordings that are currently in progress, the X axis of the imported trend can be linked to an existing axis.
	Link axis Once a trend has been imported, the new X axis (axis B) for the imported trend can be linked to the existing X axis (axis A). Axis B is then synchronized with axis A to run simultaneously, but it can be adjusted without affecting axis A. This makes it possible to compare trends that were recorded and displayed previously with the current trend.
"View" drop-down list	"View" drop-down list - for displaying/hiding elements in the user interface • Legend • Ruler • Table (values tables) • Marker (symbol assigned to a trend)
	Print There is a Print dialog that allows you to print out the current trends. You can enter a comment for the printout.

Icons, buttons, and information displayed in the trend chart

Icon		Description
		Open padlock You can change the value. The value represents a limit for the values that are displayed on the relevant axis.
		Closed padlock You cannot change the value. The value represents a limit for the values that are displayed on the relevant axis.
Legend		Each trend is identified by means of its name and a symbol with the same color as the line. The legend displays the following information consecutively for the trends shown in the chart (format: Symbol Name Date:Time: Value): • Trend symbol • Trend name • Date:Time (format: DD:MM:YYYY hh:mm:ss.sss) • Value – Value currently being read in (measuring lines not activated) – Cursor points to a measuring line (active measuring line): Value at the intersection of the trend and measuring line (the values at the intersection point are underlined)
Measuring line		Measuring lines SIMATIC PDM makes a measuring line available in trend charts. The measuring line symbol identifies the current position of the measuring line. • Legend for measuring line – The value at the intersection of the trend and measuring line is shown at the intersection – Active values are underlined – Interpolated values are not underlined • Using the measuring line – Pull the measuring line to the required position – Removes a measuring line (park position). – Remove measuring line (ALT + click) – Duplicate measuring line (Ctrl + click)
White	Active	
Orange	Passive	
Shaded trend		Cause: Data reduction The trend includes a large number of data points within the displayed range. The individual values cannot be displayed.
Dotted trends		There are no measured values in a range.

6.9.6 Work with trends

Interaction

The following functions are available in dialog boxes with trends:

- **Adjust display range**

You can increase or decrease the range of a trend shown in the chart to meet your needs.

 - **Select a range**

Use the mouse to select the starting point and keep the left mouse button pressed to select the end point of the range to be displayed. Display is stopped and the desired range is shown.
 - **Display minimum and maximum of all trends**

Double-click on the Y axis. The minimum and maximum of the Y axis are set in such a way that the values of all trends associated with this Y axis are completely visible in the interval displayed on the X axis.
 - **Display the entire time range**

Double-click the X axis. The X axis is set in such a way that all trends are included, from the first to last point.
 - **Adjust the left display area**

You can stretch or compress the corresponding axis by holding down the left mouse button. The right or upper scale value remains unchanged in this case.
 - **Adjust the right display area**

You can stretch or compress the corresponding axis by holding down the right mouse button. The left or lower scale value remains unchanged.
 - **Move the display range**

You can move the corresponding axis range by keeping the center mouse button pressed.
- **Capture trend**

You can capture all trend areas.
Double-click in the trend area. The values for all trends are displayed in the selected area (currently selected time range / X axis).
- **Move the ruler**

You can move the ruler.
Select the ruler with the mouse and move it by keeping the left mouse button pressed. The changing x-position is displayed in the bottom right of the chart. Moving the "handles" is depicted as a numeric value. Once the left mouse button is released, the Y value associated with the X position is displayed.

- **Move axis**
You can move an axis.
Hold down the "CTRL" key. Click on an axis in the chart and move it via drag-and-drop.
The grid within the chart is based on the scale shown to the left of the chart.
- **Link axes**
This function is used for comparing trend values.
Requirement: A file containing exported trend values is available.
 - Select the "Static" entry from the "Display mode" drop-down list.
The time axis is stopped.
 - Import the values for a trend.
 - Align both axes of the displayed and imported trends in order to match up suitable points of reference. To do this, use the "Move axis" function and adapt the display range of the axes.
 - Click the "Link axes" button on the toolbar.
 - Select the "Strip" entry from the "Display mode" drop-down list.
The axes now move simultaneously and you can compare the values. Changing the leading axis affects the following axis, but not vice versa.
- **Display help**
 - Device-specific help on trends can be integrated in the device description. You can open this help by clicking the "Help" button.
 - Any existing tooltip help for an object is displayed when you hover the mouse pointer over an object.
- **Print functions**
- **Export/import function**

6.9.7 Editing trends

The manufacturer of a device determines which values/parameters can be visualized and used. The device description is used to specify how SIMATIC PDM shows data that is to be displayed in charts. SIMATIC PDM may only be used to edit data (variables and constants) in charts if this is permitted by the device description. Before you can edit a trend, it must be selected in the Trend Manager.

Editing in the Trend Manager

Once you have selected the trend in the Trend Manager, the following is displayed for the editable trend:

- **Black trend points**
Trend points which can be edited

Note

Only possible if the relevant function is permitted by the device description.

- **Adding trend points**

Hold down the "CTRL" key. Click the drawing area in the chart.

- If the point you have clicked in the chart features on the trend line, the new point is inserted into the trend between two existing points.
- If the point you have clicked in the chart falls outside the trend line, the new point is added at the end of the trend.

- **Deleting trend points**

- Press and hold down the "Alt" key. Click a trend point in the chart. The trend point is deleted.
- Once a trend point has been selected, you can delete it by pressing the "Del" key.
- For multiple trend points:
Press "CTRL" + "ALT" and click on the trend points to be deleted.

- **Move trend points**

Hold down the "CTRL" key. Click on a trend point in the chart and move it via drag-and-drop.

Note

The grid and other trend points have a magnetic effect on the point to be moved.

- **Selecting multiple trend points**

The trend points are captured by using a selection rectangle.

Click with the left mouse button to select the starting point for your rectangle. Then drag the cursor across the chart while keeping the mouse button pressed. All the trend points that fall within this rectangle are marked with a red dot.

- **Define the zoom area**

The zoom area is captured using a selection rectangle.

Click with the left mouse button to select the starting point for your rectangle. Then drag the cursor across the chart while keeping the mouse button and SHIFT key pressed. The area inside the rectangle is part of the zoom area.

- **"Monotonic entry" check box**

To enter monotonic data values, activate the "Monotonic entry" check box. The arrow indicates the direction (monotonically ascending or monotonically descending).

Additional information

- Section "Icons and buttons (Page 108)"

6.10 Asset Management

6.10.1 Asset management

Asset management covers all activities and measures which help to preserve or increase the value of a plant. As well as production management, process control, and process optimization, above all this includes maintenance work designed to preserve and increase a system's value, known as "plant-level asset management".

Asset management with SIMATIC PDM

SIMATIC PDM supports you in performing plant-level asset management with functions for configuring, assigning parameters for, commissioning, diagnosing, and maintaining intelligent field devices and components.

Asset management functions of SIMATIC PDM

SIMATIC PDM can supply extended information for the Asset Management for devices that are described by a device description (EDD/DD), for example:

- Detailed diagnostic information (manufacturer information, information on fault diagnostics and troubleshooting, further documentation)
- Change information (audit trail log)
- Parameter information
- Diagnostic and status information for all devices is labeled and displayed with with standardized icons
You can find information on this in the section "Overview of Device Icons (Page 92)".
- Data is sent to an asset management system (e.g. PCS 7 maintenance station) upon request from the system.
- Export interface
You can find information on this in the section "Export ... (Page 117)".
- Device-specific information and profile information is displayed in multiple languages, provided that such information can be extracted from the device description files.

6.10.2 Use with the PCS 7 Maintenance Station

Maintenance Station Standard and Maintenance Station Basic

Process control of a maintenance station is started in the same way as the process control of an Operator Station.

When using an MS multi-user system and SIMATIC PDM, the Engineering Station must be switched on and the PDM Server manager started so that PDM device data is delivered.

SIMATIC PDM Maintenance Station

Before activating process control, check the setting for the WinCC project type in WinCC Explorer. A single-station project must be set as the project type.

Activate process control in WinCC Explorer using the "Activate" icon.

Activate SIMATIC PDM ASSET Service

You can display the diagnostics of field devices in faceplates with SIMATIC PCS 7 and SIMATIC PDM. Assign the current diagnostics project in SIMATIC PDM in order to be able to use the diagnostics function of SIMATIC PDM.

Requirements

- Configuration of the PCS 7 multiproject/project is complete.
- SIMATIC PDM is installed on ES.
- Field device parameter assignment is complete.
- A PDM application is inserted into the PC station of the engineering station.

Procedure

1. Select the PCS 7 multiproject/project in the component view of SIMATIC Manager.
2. Select the menu command **Options > SIMATIC PDM > Settings...**
3. Select the "Maintenance" tab.
4. Check the configured path.
If the configured path is not the desired path, select the path via the button "Assign current project".
5. Click "OK".

Start SIMATIC PDM ASSET Service

Note

Note that you need to start the SIMATIC PDM ASSET Service in the SIMATIC PDM ASSET Service Manager on the engineering station once manually in order to receive data from PDM.

1. Click the following icon in the information area of the task bar of the operating system:



Starting/stopping the SIMATIC PDM ASSET Service.
The "Simatic PDM Asset Service Manager" dialog box opens.

Editing several PCS 7 projects with PDM

If you edit several projects in SIMATIC Manager with a PDM computer, you have to observe the following sequence when you change between projects:

1. Stop the SIMATIC PDM ASSET Service on the PDM computer.
2. Stop the process mode on the Maintenance Station of the current project.
3. Open the required project in SIMATIC Manager.
4. Set the maintenance project in the SIMATIC Manager.
5. Start the SIMATIC PDM ASSET Service on the PDM computer.
6. Start the process mode on the Maintenance Station of the current project.

Menus and dialog boxes in SIMATIC PDM

The menus and dialog boxes can contain other device-specific menu commands.

Note

Device-specific menu items and help for these menu items are derived from the device description assigned to the object. You will find device-specific information in the Online Help and in the documentation provided by the device manufacturer. The PDF file associated with this documentation does not contain any device-specific information.

7.1 "File" menu

The menus and dialog boxes can contain other device-specific menu commands.

Note

Device-specific menu items and help for these menu items are derived from the device description assigned to the object. You will find device-specific information in the Online Help and in the documentation provided by the device manufacturer. The PDF file associated with this documentation does not contain any device-specific information.

7.1.1 Save

This menu command is used to save the current parameter settings from the parameter table in the project (Offline data storage) on hard disk.

7.1.2 Export ...



Figure 7-1 Export...

This menu command starts the export of device data of a PDM object to an XML file. Make the settings for the export of device data in the "Export - <object name>" dialog.

See also

"Export - <Object name>" dialog box (Page 118)

7.1.2.1 "Export - <Object name>" dialog box

Use the "Export - <Object name>" dialog box to make the settings for exporting device data and start the export function.

Select the export directory and transformation file

- **Export directory**
Enter the path for storing the generated XML files in the input box. The name of each device-specific XML file that is exported is structured as follows:
<plant-specific device name>\${date(YYYYMMDD_hhmmss)}.xml
- **HTML transformation file**
 - Xsl file which includes the information for display in HTML format.
 - This input box allows you to specify a file containing reference data for how the export file (XML format) should look. To create plant-specific HTML transformation files, use the default file as your starting point.

Selecting data for export

The following information can be exported:

- **Device parameters**
Device parameters of the devices selected before export.
- **Diagnostics**
Table listing diagnostic parameters plus the associated diagnostic text.
- **Document Manager**
Table listing the names of the documents that have been assigned to a device.

"Select" area - Selecting an object

If the object selected prior to the export contains subordinate objects, you can create a separate export file for each subordinate object. Use the option buttons in the "Select" area to make your selection.

- **Object**
Only the selected object
- **Object with all subordinate objects**
Only the selected object/device with directly subordinate substructures (networks are not considered)
- **Object with all subordinate objects and networks**
The selected object/device, including all subordinate substructures

List

The list in the dialog box shows the objects for which an export file is to be generated in accordance with the option button that has been activated in the "Select" area.

If any errors occur for an object/device, the entire action is terminated.

The following icons are used to indicate the processing status:

	The export was performed without error.
	Messages and warnings occurred during the export.
	The export was aborted due to an error.
	The object is currently being processed elsewhere.
	The export was not performed for this device.
	The function is not supported by this device.
	Export is currently underway for this device.

Display

The dialog box is updated during the export process.

"Status" display

- While the process is ongoing, the display field shows the entry "Export: action started."
- Once the process is complete, the display field shows the entry "Export: action completed without error."

Messages

Errors and warnings are entered in the alarm log.

7.1.3 Import ...



Figure 7-2 Import...

This menu command starts the import of device data from an XML file to a PDM object. Make the settings for the import of device data in the "Import - <object name>" dialog.

See also

"Import - <Object name>" dialog box (Page 120)

7.1 "File" menu

7.1.3.1 "Import - <Object name>" dialog box

Use the "Import - <Object name>" dialog box to make the settings for importing device data and start the import function.

During import, data is assigned to an existing device. This is the data from the XML file that was created by exporting from another device. You can select this XML file as the import file.

Import file

In the "Import file" input box, enter the XML file that contains the data for the required device.

As soon as you enter the import file details, a device type consistency check is performed automatically. You can find information on this in the section "How to import device data (Page 89)".

"Import identification data" check box

You can use the "Import identification data" check box to make the following settings:

- "Import identification data" check box **activated** (default)
The import file data record is imported into the device in full.
- "Import identification data" check box **deactivated**
The import file data record is not imported into the device in full. The following data is excluded from import:
 - Device name
 - Description
 - Message

7.1.4 Print

You can print out the parameter list for a device.

"Print" button



Setting the printer options

Note

Note the following:

- The printer options depend on your computer's operating system and on the printer being used.
 - The file is sent to the default printer.
 - If the printout has more than one page, two periods are printed after the page number in the bottom right corner of the page. The last page does not have these periods, indicating no more pages are to follow.
-

Requirements

- SIMATIC PDM is open.
- In the structure view, an object is selected in the master folder of a device.
You can find information on the structure view in the section titled "Structure view (Page 44)".

Procedure

1. Select the menu command **File > Print** or click the "Print" button.
The "Print" dialog box opens.
2. Select the required options.
3. Click "OK".

7.1.5 Exit

This command closes the "SIMATIC PDM" program.

If changes have been made in the current session, a prompt appears giving you the option of saving the file before closing the program.

7.1.5.1 "Save changes?" dialog box

This dialog box indicates that changes have been made, which have yet to be saved.

- Click "Yes" if you want to save the changes.
- Click "No" if you want to discard the changes.
- Click "Cancel" if you do not want to exit SIMATIC PDM yet.

7.2 Editing (depends on device)

The menus and dialog boxes can contain other device-specific menu commands.

Note

Device-specific menu items and help for these menu items are derived from the device description assigned to the object. You will find device-specific information in the Online Help and in the documentation provided by the device manufacturer. The PDF file associated with this documentation does not contain any device-specific information.

7.3 "Device" menu

The menus and dialog boxes can contain other device-specific menu commands.

Note

Device-specific menu items and help for these menu items are derived from the device description assigned to the object. You will find device-specific information in the Online Help and in the documentation provided by the device manufacturer. The PDF file associated with this documentation does not contain any device-specific information.

7.3.1 Download to device



Figure 7-3 Download to devices...

This menu command writes the parameters shown in the parameter table to the device.

If you are not yet online, SIMATIC PDM makes an online connection at this time.

Errors and messages

During the download, all errors and messages are shown immediately. Any errors occurring in a device do not cause the entire action to be aborted; they only apply to the device that is currently being processed. Errors and other messages are saved and can be displayed at a later time.

Suppress alarm dialogs

You can suppress the output of alarm dialogs while loading data. Activate the check box "Load without executing Info dialogs". For further information, select the **Options > SIMATIC PDM > Settings > The "Download" tab** (Page 154) menu command.

Additional information

Information on loading FF devices can be found in the commissioning manual *PCS 7 in practice; FOUNDATION Fieldbus*

See also

"Download To Device - <...>" dialog box (Page 123)

7.3.1.1 "Download To Device - <...>" dialog box

In this dialog box, you enter the desired settings for downloading the configuration data to the devices.

"Select" area

If the object selected prior to loading contains subordinate objects, you can load the configuration to all subordinate objects. Use the option buttons in the "Select" area to make your selection.

- Object
- Object with all subordinate objects
- Object with all subordinate objects and networks

Field	Explanations/instructions
Object	Only downloads the data for the selected object.
Object with all subordinate objects	Downloads the data for the selected object, including all subordinate objects. Note: The tree structure can be expanded and closed for objects with subordinate objects.
Object with all subordinate objects and networks	Downloads the data from the selected object, including all subordinate substructures.

List

The list in the dialog box shows the objects that are to be loaded in accordance with the option button that has been activated in the "Select" area.

The processing status is indicated by the following icons:

	Upload performed without error.
	Messages and warnings occurred during the upload.

7.3 "Device" menu

	Upload was aborted due to an error.
	The object is currently being processed elsewhere.
	Upload has never been performed for this device.
	Upload was not performed because the action is not supported by the device type.
	Upload is currently underway for this device.

Display

The dialog box is updated while the data is being loaded.

Status display

- While the process is underway, the loading progress is indicated as a percentage for the relevant device.
- Once the process is complete, the display field shows the entry "Result".

Alarm log

- The alarm log shows errors and warnings or outputs from the EDD.

See also

Overview of Device Icons (Page 92)

7.3.2 Uploading to PG/PC



Figure 7-4 Upload to PG/PC...

This menu command reads the parameters of the device and displays them in the parameter table.

SIMATIC PDM will ask you if the existing data should also be saved offline before overwriting it.

If you are not yet online, SIMATIC PDM makes an online connection at this time.

Note

Before uploading to PG/PC from remote I/Os, you need to add a corresponding number of empty modules below the head module in the configuration.

Errors and messages

During the download, all errors and messages are shown immediately. Any errors occurring in a device do not cause the entire action to be aborted; they only apply to the device that is currently being processed. Errors and other messages are saved and can be displayed at a later time.

Suppress alarm dialogs

You can suppress the output of alarm dialogs while loading data. Activate the check box "Load without executing Info dialogs". For further information, select the **Options > SIMATIC PDM > Settings > The "Download" tab** (Page 154) menu command.

Additional information

Information on loading FF devices can be found in the commissioning manual *PCS 7 in practice; FOUNDATION Fieldbus*

See also

"Upload to PG/PC - <...>" dialog box (Page 125)

7.3.2.1 "Upload to PG/PC - <...>" dialog box

In this dialog box, you enter the desired settings for uploading the data from the devices to the configuration data.

"Select" area

If the object selected prior to loading contains subordinate objects, you can load the configuration to all subordinate objects. Use the option buttons in the "Select" area to make your selection.

- Object
- Object with all subordinate objects
- Object with all subordinate objects and networks

Field	Explanations/instructions
Object	Only downloads the data for the selected object.
Object with all subordinate objects	Downloads the data for the selected object, including all subordinate objects. Note: The tree structure can be expanded and closed for objects with subordinate objects.
Object with all subordinate objects and networks	Downloads the data from the selected object, including all subordinate substructures.

List

The list in the dialog box shows the objects that are to be loaded in accordance with the option button that has been activated in the "Select" area.

The processing status is indicated by the following icons:

	Upload performed without error.
	Messages and warnings occurred during the upload.
	Upload was aborted due to an error.
	The object is currently being processed elsewhere.
	Upload has never been performed for this device.
	Upload was not performed because the action is not supported by the device type.
	Uploading is currently underway for this device.

Display

The dialog box is updated while the data is being loaded.

Status display

- While the process is underway, the loading progress is indicated as a percentage for the relevant device.
- Once the process is complete, the display field shows the entry "Result".

Alarm log

- The alarm log only shows errors and warnings or outputs from the EDD.

See also

Overview of Device Icons (Page 92)

7.3.3 Assign address and TAG



Figure 7-5 Assign address and TAG

In the "Assign address and TAG" dialog box, you can assign new addresses and device names to a device:

- PROFIBUS field devices
- FF field devices

Changing the address and TAG online

For devices that can be reached online you can execute the following changes via the "Assign address and TAG" menu command:

- Move devices to any address within the segment or to a configured place
- For FF field devices: Change device name

Consistency check

- The name or the address cannot be changed in the object.
- The target address is occupied and/or is located in an unauthorized area.
- The device name is unauthorized and/or already present in the segment.

Procedure

1. Open SIMATIC PDM for a configured device:
 - In a process device view, select the menu command **Edit > Open object**.
 - Double-click the device in HW Config.
2. Select the menu command **Devices > Assign address and TAG ...**.
3. In the "online" area enter the following for the device located in the plant:
 - the address (mandatory with PROFIBUS devices)
 - Only possible with FF field devices:
Enter the device designation (TAG) of the field device in the plant configuration.
4. Click "Search":
 - A search is performed for a device at the online address entered.
 - If the device is found the online data is displayed.
 - The "Transfer" button is now enabled.
5. Click "Transfer".

Note

Restart

Changing the address will restart the device.

Additional information

Section ""Assign address and TAG..." dialog box (Page 128)"

7.3 "Device" menu

See also

Working with the LifeList (Page 96)

7.3.3.1 "Assign address and TAG..." dialog box

Requirement

An online connection to the field device must be available to execute this function.

Required steps

The application of the function consists of the following steps:

1. Find
Establish an online connection to a device with the relevant device address.
2. Transfer
Transfer address and tag to the device to which the online connection has been established.

Buttons

Button	Function
Find Button in the target device area (online)	You can use the search function in online mode to find a device with a specific address. Search criterion: • For PROFIBUS devices: online address only • For FF devices: online address or device name The name and address of an online device found will be displayed.
Transfer (Device: Project) area	If there is an online connection to a device, you can transfer the project data entered in the "Name/TAG" and "Address" input boxes to the device. If the operation is successful (status \"Transfer succeeded\"), the same information is in both boxes.
Reset address (only available for FF devices)	• The "Reset address" button is only available for FF devices. • The function "moves" the device to the area for temporary FF devices (reserved address range for FF devices - addresses 248 to 251). The name (TAG) remains unchanged. • You can verify execution with LifeList .

Note

Restart

Changing the address will restart the device.

Note**Address or name (TAG) occupied**

If the address or name (TAG) is occupied, then the action will not be performed. A corresponding message will be displayed.

Device information

In the dialog box, the following data is shown for both the device in the project (source) and the detected device (online):

- Manufacturer
- Device type
- Device revision

See also

Working with the LifeList (Page 96)

7.3.4 Object Properties



Displays general information about the selected object.

This information is stored together with the parameter set.

Depending on the device, some of this information can be transferred to the device, for example:

- TAG
- Message
- Description
- Address
- ...

See also

"General" tab (Page 130)

"Device" tab (Page 130)

"Diagnostics" tab (Page 131)

"Communication" tab (Page 131)

"Document Manager" tab (Page 131)

7.3 "Device" menu

7.3.4.1 "General" tab

Purpose

On this tab you will find information on the PDM object and you can enter additional information, if you so wish.

You can find information on this in the section ""Options" menu (Page 149)".

Field	Explanations/instructions
Object name (TAG)	The name of the PDM object assigned during configuration is entered here as a default. You can enter a new object name. The change is applied everywhere where reference is made to the object name. The name is only visibly updated once the change has been saved or (in some cases) when the object concerned is next opened.
Description	Enter a comment for the object here, e.g. plant area and function, or leave the field blank.
Message	Enter a message here for a service technician, for example, or leave the field blank.
Text 1	Enter additional information here or leave the field blank.
Text 2	Enter additional information here or leave the field blank.
Text 3	Enter additional information here or leave the field blank.
Author	Enter the name of the author or leave the field blank.
Created on:	Displays the date on which the PDM object was created.
Revision date	Displays the date on which the last change was made.
Comment	Enter a comment here or leave the field blank.
"System configuration" check box	If this option is activated, the object is linked with the system for hardware configuration (e.g. with STEP 7/HW Config).
License information	Shows the utilization of the TAG licenses (number of tags used and licensed TAGs).

Entries that appear in **bold** within this table can be changed.

7.3.4.2 "Device" tab

Purpose

You display the device data in this tab.

The contents of the fields cannot be changed. The contents are derived from the device description assigned to the object provided they are entered in this description.

Some entries are displayed as codes instead of plain text.

Field	Explanations/instructions
Device Type	Shows the device type as specified in the "Device Selection" dialog box.
Device DDL	Shows the device description file assigned to the object.

Field	Explanations/instructions
Order Number	Shows the order number of the device.
MANUFACTURER:	Shows the manufacturer.
DD_REVISION:	Shows the version of the device description file (hexadecimal format).
DEVICE_TYPE:	Shows the device type (hexadecimal format).
DEVICE_REVISION:	Shows the hardware version of the device (hexadecimal format).

7.3.4.3 "Diagnostics" tab

Purpose

In this tab, you can display information about the communication of the device. The icon shown for the device depends on the information available.

Field	Explanations/instructions
Communication	Shows whether the communication is good or faulty.
Device status	Shows specific information about the status of the connected device.
Last check	Shows the date when the device was last tested.
Message text	Shows detailed information about the device status.

"Update Diagnostics" button

Click the "Update Diagnostics" button if required.

7.3.4.4 "Communication" tab

Purpose

On this tab you can display the address of a device. If the device was configured in the process device network view, you can change the address.

The "Redundancy" area is displayed for field devices which are capable of redundant interconnection.

See also

"Properties - Select object" dialog box (Page 75)

Connecting field devices to a redundant bus system (Page 74)

7.3.4.5 "Document Manager" tab

Use this tab to assign documents to a PDM object.

Actions on the "Document Manager" tab

Action	To execute
File	1. Click the "..." button. 2. Navigate to the document required. 3. Click "Open". The storage path and file name of the selected file is displayed in the "File" box.
Title	Enter a name for the document.
Test whether a document can be displayed	Select the menu command Open .
Remove a document from the list	Select the menu command Reset .

Open documents

To open the documents, select the SIMATIC PDM menu command **Help > Document Manager**. Use the mouse to select the required document from the submenu.

7.4 "View" menu

The menus and dialog boxes can contain other device-specific menu commands.

Note

Device-specific menu items and help for these menu items are derived from the device description assigned to the object. You will find device-specific information in the Online Help and in the documentation provided by the device manufacturer. The PDF file associated with this documentation does not contain any device-specific information.

7.4.1 Process variables / Measured value display (depends on device)

General Information

Opens the "Process variables" or "Measured value display" online dialog box.

Structure

The dialog box and its associated help program are structured in a device-specific manner. The information required for this is derived from the device description assigned to the object. Therefore, this dialog box *cannot* be described in detail here.

The device description contains the following information:

- Structure of the individual tabs
- Which values are displayed
- Where and how the values are displayed
- Scope of the message window
- Scope and content of the device-specific help program

Status information

Status icons can be displayed for every value shown in the dialog box. You can find information on this in the section ""Status" column of the parameter table (Page 47)".

Operator elements

- "Close" button
- "Messages" button
- "Help" button

Cycle time

If there is an online connection to the field device, the process variables displayed in the dialog box are updated cyclically. To set the cycle time, select the menu command **Options > SIMATIC PDM > Settings** in SIMATIC Manager and then go to the "Communication (Page 153)" tab.

7.4.2 Start LifeList

This menu command is used to call the LifeList.

LifeList makes it possible to identify active field devices without configuration. With LifeList , you perform a scan on one of the following network objects:

- PROFIBUS DP network
- PA network
- FF network

See also

"LifeList" dialog box (Page 97)

7.4.3 Charts and trends (depends on device)

Note

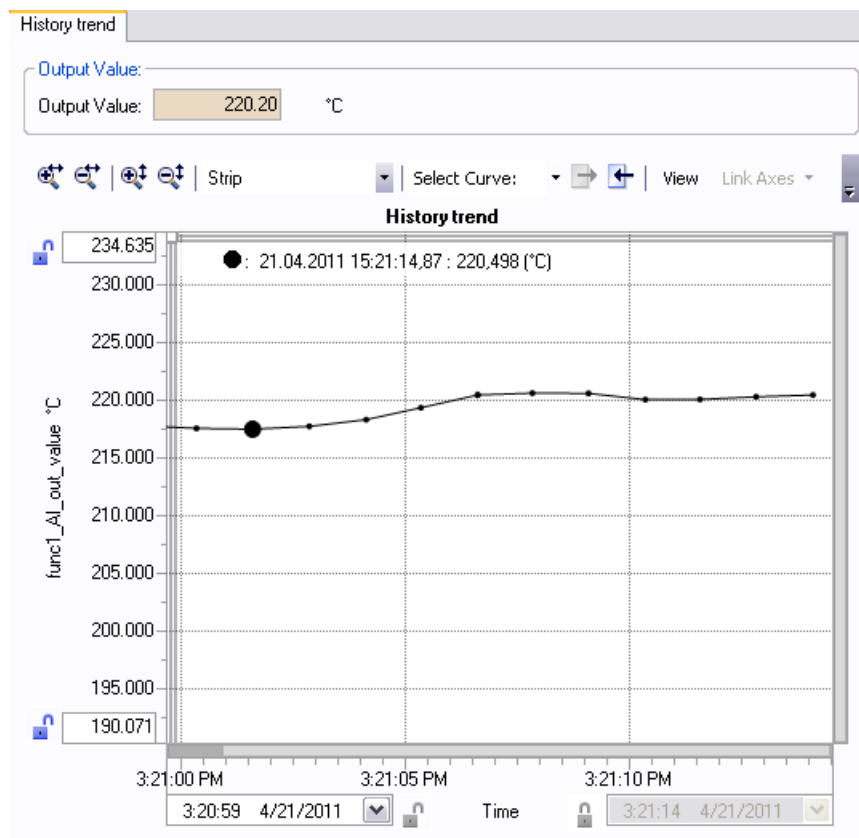
History trends can be displayed in SIMATIC PDM if they are provided by the manufacturer of the device description.

Additional information

- Section "Trend chart (Page 104)"
- Section "Work with trends (Page 109)"
- Section "Editing trends (Page 111)"
- Section "Icons and buttons (Page 108)"

Example

The figure below shows an example of a dialog window with history trends.



7.4.3.1 Displaying process variables and measured values

Note

Functions for the display of process variables and measured values are available in SIMATIC PDM, if they are provided by the manufacturer of the device description.

Additional information

- Section "Trend chart (Page 104)"
- Section "Tachometer diagram (Page 106)"
- Section "Bar chart (Page 105)"
- Section "Icons and buttons (Page 108)"
- Section "Work with trends (Page 109)"
- Section "Editing trends (Page 111)"

7.5 "Diagnostics" menu

The menus and dialog boxes can contain other device-specific menu commands.

Note

Device-specific menu items and help for these menu items are derived from the device description assigned to the object. You will find device-specific information in the Online Help and in the documentation provided by the device manufacturer. The PDF file associated with this documentation does not contain any device-specific information.

7.5.1 Update diagnostic status

SIMATIC PDM attempts to establish an online connection to the object which is currently selected and to update the status.

See also

"Update diagnostics - <...>" dialog box (Page 135)

7.5.1.1 "Update diagnostics - <...>" dialog box

In this dialog box, you select the objects whose diagnostic status you want to update.

7.5 "Diagnostics" menu

"Select" area

If the object selected prior to carrying out the menu command contains subordinate objects, you can determine the diagnostic status for all subordinate objects. Use the option buttons in the "Select" area to make your selection.

- Object
- Object with all subordinate objects
- Object with all subordinate objects and networks

Field	Explanations/instructions
Object	Determines the diagnostic status of the selected object.
Object with all subordinate objects	Determines the diagnostic status of the selected object, including all subordinate objects. Note: The tree structure can be expanded and closed for objects with subordinate objects.
Object with all subordinate objects and networks	Determines the diagnostic status of the selected object, including all subordinate substructures.

Starting an action

The diagnostic status of the selected object is not determined automatically. Click "Start" to start the action for the current selection.

List

The list in the dialog box shows the objects for which the diagnostic status is to be determined in accordance with the option button that has been activated in the "Select" area.

The processing status is indicated by the following icons:

	The diagnostic status was determined.
	Messages and warnings occurred during determination of the diagnostic status.
	Determination of diagnostic status was aborted due to an error.
	The object is currently being processed elsewhere.
	Determining diagnostic status has never been performed for this device.
	Determining diagnostic status was not performed because the action is not supported by the device type.
	Determination of diagnostic status is currently underway for this device.

Display

Click "Start" to execute the menu command. The dialog box is updated as long as the function is executed or until the function is canceled.

Status display

- While the process is underway, the progress is indicated as a percentage for the relevant device.
- Once the process is complete, the display field shows the entry "Result".

Messages

The alarm log shows errors and warnings or outputs from the EDD.

7.6 "Options" menu (depends on device)

The menus and dialog boxes can contain other device-specific menu commands.

Note

Device-specific menu items and help for these menu items are derived from the device description assigned to the object. You will find device-specific information in the Online Help and in the documentation provided by the device manufacturer. The PDF file associated with this documentation does not contain any device-specific information.

7.7 "Help" menu

7.7.1 Contents

This menu command displays the Help on SIMATIC PDM.

You can navigate to different help topics from the contents page. The "Index" and "Find" functions enable you to display information on specific terms.

7.7.2 Help for device parameters

This menu commands calls the device-specific help with descriptions of the parameters.

Note: The device-specific help is derived from the device description assigned to the object.

7.7.3 About...

This menu command displays information about the software version and the copyright.

7.7.4 Document Manager

In the submenu of the "Document Manager" menu command, you can call the documents assigned to a PDM object.

To assign the documents, select the menu command **Device > Object Properties > Document Manager**.

Additional information

- Section titled "Inserting plant-specific documents for process mode (Page 78)"
- Section titled "'Document Manager' tab (Page 131)"

Menus and dialog boxes for SIMATIC PDM in the SIMATIC Manager

8.1 "Edit" menu

8.1.1 SIMATIC Manager > "Edit" menu

Installing SIMATIC PDM makes additional functions available in the **Edit** menu of SIMATIC Manager.

Requirement

A field device or a network with subordinate field devices is selected in one of the SIMATIC PDM views.

Functions

- **Start SIMATIC PDM**
Select the menu command **Edit > Open object**.
- **SIMATIC PDM functions**
The following functions are available via the **Edit > SIMATIC PDM** menu:
 - Export ... (Page 117)
 - Import ... (Page 119)
 - Download to device (Page 122)
 - Uploading to PG/PC (Page 124)
 - Update diagnostic status (Page 135)
 - Start LifeList (Page 145)
 - Device selection (Reassign) (Page 145)

8.1.2 Object Properties



Displays general information about the selected object.

This information is stored together with the parameter set.

Depending on the device, some of this information can be transferred to the device, for example:

8.1 "Edit" menu

- TAG
- Message
- Description
- Address
- ...

See also

"General" tab (Page 130)

"Device" tab (Page 130)

"Diagnostics" tab (Page 131)

"Communication" tab (Page 131)

"Document Manager" tab (Page 131)

8.1.2.1 "General" tab

Purpose

On this tab you will find information on the PDM object and you can enter additional information, if you so wish.

You can find information on this in the section ""Options" menu (Page 149)".

Field	Explanations/instructions
Object name (TAG)	The name of the PDM object assigned during configuration is entered here as a default. You can enter a new object name. The change is applied everywhere where reference is made to the object name. The name is only visibly updated once the change has been saved or (in some cases) when the object concerned is next opened.
Description	Enter a comment for the object here, e.g. plant area and function, or leave the field blank.
Message	Enter a message here for a service technician, for example, or leave the field blank.
Text 1	Enter additional information here or leave the field blank.
Text 2	Enter additional information here or leave the field blank.
Text 3	Enter additional information here or leave the field blank.
Author	Enter the name of the author or leave the field blank.
Created on:	Displays the date on which the PDM object was created.
Revision date	Displays the date on which the last change was made.
Comment	Enter a comment here or leave the field blank.

Field	Explanations/instructions
"System configuration" check box	If this option is activated, the object is linked with the system for hardware configuration (e.g. with STEP 7/HW Config).
License information	Shows the utilization of the TAG licenses (number of tags used and licensed TAGs).

Entries that appear in **bold** within this table can be changed.

8.1.2.2 "Device" tab

Purpose

You display the device data in this tab.

The contents of the fields cannot be changed. The contents are derived from the device description assigned to the object provided they are entered in this description.

Some entries are displayed as codes instead of plain text.

Field	Explanations/instructions
Device Type	Shows the device type as specified in the "Device Selection" dialog box.
Device DDL	Shows the device description file assigned to the object.
Order Number	Shows the order number of the device.
MANUFACTURER:	Shows the manufacturer.
DD_REVISION:	Shows the version of the device description file (hexadecimal format).
DEVICE_TYPE:	Shows the device type (hexadecimal format).
DEVICE_REVISION:	Shows the hardware version of the device (hexadecimal format).

8.1.2.3 "Diagnostics" tab

Purpose

In this tab, you can display information about the communication of the device. The icon shown for the device depends on the information available.

Field	Explanations/instructions
Communication	Shows whether the communication is good or faulty.
Device status	Shows specific information about the status of the connected device.
Last check	Shows the date when the device was last tested.
Message text	Shows detailed information about the device status.

"Update Diagnostics" button

Click the "Update Diagnostics" button if required.

8.1 "Edit" menu

8.1.2.4 "Communication" tab

Purpose

On this tab you can display the address of a device. If the device was configured in the process device network view, you can change the address.

The "Redundancy" area is displayed for field devices which are capable of redundant interconnection.

See also

"Properties - Select object" dialog box (Page 75)

Connecting field devices to a redundant bus system (Page 74)

8.1.2.5 "Document Manager" tab

Use this tab to assign documents to a PDM object.

Actions on the "Document Manager" tab

Action	To execute
File	1. Click the "..." button. 2. Navigate to the document required. 3. Click "Open". The storage path and file name of the selected file is displayed in the "File" box.
Title	Enter a name for the document.
Test whether a document can be displayed	Select the menu command Open .
Remove a document from the list	Select the menu command Reset .

Open documents

To open the documents, select the SIMATIC PDM menu command **Help > Document Manager**. Use the mouse to select the required document from the submenu.

8.1.3 SIMATIC PDM

8.1.3.1 Export ...



Figure 8-1 Export...

This menu command starts the export of device data of a PDM object to an XML file.
Make the settings for the export of device data in the "Export - <object name>" dialog.

See also

"Export - <Object name>" dialog box (Page 118)

8.1.3.2 Import ...



Figure 8-2 Import...

This menu command starts the import of device data from an XML file to a PDM object.
Make the settings for the import of device data in the "Import - <object name>" dialog.

See also

"Import - <Object name>" dialog box (Page 120)

8.1.3.3 Download to device



Figure 8-3 Download to devices...

This menu command writes the parameters shown in the parameter table to the device.

If you are not yet online, SIMATIC PDM makes an online connection at this time.

Errors and messages

During the download, all errors and messages are shown immediately. Any errors occurring in a device do not cause the entire action to be aborted; they only apply to the device that is currently being processed. Errors and other messages are saved and can be displayed at a later time.

Suppress alarm dialogs

You can suppress the output of alarm dialogs while loading data. Activate the check box "Load without executing Info dialogs". For further information, select the **Options > SIMATIC PDM > Settings > The "Download" tab** (Page 154) menu command.

Additional information

Information on loading FF devices can be found in the commissioning manual *PCS 7 in practice; FOUNDATION Fieldbus*

8.1 "Edit" menu

See also

"Download To Device - <...>" dialog box (Page 123)

8.1.3.4 Uploading to PG/PC



Figure 8-4 Upload to PG/PC...

This menu command reads the parameters of the device and displays them in the parameter table.

SIMATIC PDM will ask you if the existing data should also be saved offline before overwriting it.

If you are not yet online, SIMATIC PDM makes an online connection at this time.

Note

Before uploading to PG/PC from remote I/Os, you need to add a corresponding number of empty modules below the head module in the configuration.

Errors and messages

During the download, all errors and messages are shown immediately. Any errors occurring in a device do not cause the entire action to be aborted; they only apply to the device that is currently being processed. Errors and other messages are saved and can be displayed at a later time.

Suppress alarm dialogs

You can suppress the output of alarm dialogs while loading data. Activate the check box "Load without executing Info dialogs". For further information, select the **Options > SIMATIC PDM > Settings > The "Download" tab** (Page 154) menu command.

Additional information

Information on loading FF devices can be found in the commissioning manual *PCS 7 in practice; FOUNDATION Fieldbus*

See also

"Upload to PG/PC - <...>" dialog box (Page 125)

8.1.3.5 Update diagnostic status

SIMATIC PDM attempts to establish an online connection to the object which is currently selected and to update the status.

See also

"Update diagnostics - <...>" dialog box (Page 135)

8.1.3.6 Start LifeList

This menu command is used to call the LifeList.

LifeList makes it possible to identify active field devices without configuration. With LifeList , you perform a scan on one of the following network objects:

- PROFIBUS DP network
- PA network
- FF network

See also

"LifeList" dialog box (Page 97)

8.1.3.7 Device selection (Reassign)

Use this menu to assign a different or new device description (EDD) to an object.

The devices are structured by the device types in a tree structure.

Note

Integrated devices

You can only select devices for which a device description file has been integrated via the Device Integration Manager.

Device description dependency

When a device is replaced in a plant, you have to update the project in SIMATIC PDM. When devices are replaced in a plant, the following situations can arise:

- **Device description is compatible**
The device to be replaced can be operated with the device description of the device to be integrated (e.g. after updating the firmware).
The configuration can be uploaded to the device to be integrated.
- **Device description is incompatible**
The device to be replaced **cannot** be operated with the device description of the device to be integrated (e.g. replacing device with one from a different manufacturer).
The device to be replaced should be removed from the configuration when replacing this device with an incompatible one. Reconfigure the device.

Note

Recommendation

Export the device data before making the change, because the device will be initialized again with the new device description.
The following steps describe how to reassign the device description.

Assigning a device description to an object

You have the following options for assigning a device description to an object:

- Identify a device via an online connection
- Assigning the device description manually

Identify a device via an online connection

If you have an online connection to the device, click the "Device identification" button.

- **"Device identification" button**
When you click this button, a connection to the device is established and an attempt is made to read the information from the device and assign the required device description to it.
- If not all the necessary information could be read out, you need to assign the device description manually. After device identification
You can find the remaining structures required for the device in the tree structure.
Make your selection from these structures.

Assigning the device description manually

Select the required device description from the "Device catalog" list, based on the following data:

- Device type
- Manufacturer

- Device
- Revision

Note

Note on remote I/Os

With remote I/O, you search for the manufacturer and a type for the head-end station during device selection.

Assign the required device description to the device.

Device description missing from PC

Open the Device Integration Manager and integrate the missing device descriptions.

See also

How to integrate a device description (Page 31)

8.2 "Insert" menu

8.2.1 Inserting an object

Installing SIMATIC PDM makes additional functions available in SIMATIC Manager. These can be accessed by selecting the menu command **Insert > SIMATIC PDM**.

Select the PDM object that you want to insert. Depending on the object selected in SIMATIC Manager, only objects which can be inserted at the selected object are available.

Requirement

One of the following views is open:

- Process device network view
- Process device plant view

Purpose

The configured view determines which of the following object types can be inserted:

- Object
- Networks
- Communications network
- Devices

Insert > SIMATIC PDM > <submenu>

Networks (process device network view) and devices (process device plant view)

- You can select the "Networks" menu command in the process device network view. This menu command expands the tree structure by adding the "Networks" folder for working with PDM objects.
- You can select the "Devices" menu command in the process device network view. This menu command expands the tree structure by adding the "Devices" folder for working with PDM objects.

NOTICE

"Networks" (process device network view) and "Devices" (process device plant view) folders

If you want to reuse copied projects without PDM objects, you can delete this folder **including the PDM configuration it contains**. Select the following function in the SIMATIC Manager: **File > Save As ... with the "With reorganization (slow)" check box selected**.

Communications network (process device network view)

In the process device network view, you can create the following communications network under the "Networks" folder: PROFIBUS DP network.

Selecting the menu command opens the selection dialog ("Insert object - <...>" dialog box).

You can use the menu command to create the following objects:

- First time only:
The "PC station" object (PDM computer, computer on which PDM is installed)
- The communications network

Objects

- Process device network view
In the process device network view, you can create objects for field devices. This is done at a communications network.
Selecting the menu command opens the selection dialog ("Insert object - <...>" dialog box). Click the "Assign device type..." button. The "SIMATIC PDM device selection" dialog box opens. Select the field devices in the tree structure.
- Process device plant view
You can create objects (objects for field devices) in the process device plant view under the "Devices" folder.
Selecting the menu command opens the selection dialog ("Insert object - <...>" dialog box). Click the "Assign device type..." button. The "SIMATIC PDM device selection" dialog box opens. Select the field devices in the tree structure.

8.3 "View" menu

8.3.1 Process devices plant view

In SIMATIC Manager, you call the process device plant view using the menu command **View > Process devices plant view**.

The process devices plant view provides an overview of all configured devices in all configured networks. This view is used to obtain a quick overview of the configured devices. You cannot configure new networks in this view.

8.3.2 Process devices network view

In SIMATIC Manager, you call the process devices network view using the menu command **View > Process devices network view**.

The process devices network view displays the devices in groups according to the network topology. Devices that can be reached via several networks are displayed multiple times. You can configure networks and process devices in this view.

8.4 "Options" menu

You will find the following views in SIMATIC Manager after the installation of SIMATIC PDM:

- Process device plant view
- Process device network view

Project settings

The project settings are made in the SIMATIC Manager. These settings apply to the SIMATIC project and SIMATIC PDM.

- Language for the menus and dialog boxes
- Default project view
- Display
- Details in the columns

Project settings

You make the project settings in SIMATIC Manager using the following menu command:

Options > Settings ...

Settings	Tab	
Language selection	"Language" tab	Language displayed in the menus and dialog boxes in the SIMATIC Manager and SIMATIC PDM
Default project view	"View" tab	Start view for the SIMATIC Manager; available views for SIMATIC PDM: • Process device plant view • Process device network view
Details in the columns	"Columns" tab	Views and object types in the parameter table

"Columns" tab

On the "Columns" tab, you can select the columns that you want to be displayed in a PDM view.

Select an object type in the tree structure. Then go to the "Visible Columns" list and activate the check boxes for the entries you want to be displayed for the selected object type.

Object types

- **Type 1** in the tree structure
 - Process device plant view
 - Process device network view
- **Type 2** in the tree structure
 - Process device plant view > **Devices**
- **Type 3**
 - Process device network view > **Networks**
- **Type 4**
 - Process device network view > Networks > **PC**
- **Type 5**
 - Process device network view > Networks > **Communications network**
 - Process device network view > Networks > Communications network > **Object** (on all subordinate levels)

	Visible columns				
Object type	Type 1	Type 2	Type 3	Type 4	Type 5
Object name	Standard	Standard	Standard	Standard	Standard
Picture Name For OS	Standard				
LID		Standard			

	Visible columns				
Object type	Type 1	Type 2	Type 3	Type 4	Type 5
Address		x		Standard	Standard
Description	Standard	Standard	Standard	Standard	Standard
Message	Standard	Standard	Standard	Standard	Standard
Device Status		Standard			Standard
Last communication		Standard			Standard
Text1	x	x	x	x	x
Text2	x	x	x	x	x
Text3	x	x	x	x	x
Device		Standard	x	x	Standard
PLT ID		Standard			x
Manufacturer		Standard			Standard
Serial number		x			x
Install date		x			x
Hardware version		x			x
Software version		x			x
Order number		x			x
Object status		Standard			Standard
DD revision		x			x
Author	x	x	x	x	x
Revision date	Standard	Standard	Standard	Standard	Standard
Comment	x	x	x	x	x

- **Type 6**
 - Settings for a multiproject

	Process device plant view (multiproject)	Process device network view (multiproject)
Object type		
Object name	Standard	Standard
Project language	Standard	Standard
UNC path	Standard	Standard
Path to "Computer"	Standard	Standard
Computer	Standard	Standard
Computer after removal	Standard	Standard
Path after removal	Standard	Standard

See also

Settings for SIMATIC PDM (Page 152)

Menus and dialog boxes for SIMATIC PDM in the SIMATIC Manager (Page 139)

8.4 "Options" menu

8.4.1 Settings for SIMATIC PDM

8.4.1.1 Settings for SIMATIC PDM

This command opens the "Settings" dialog box.

In this dialog box, you can adapt SIMATIC PDM to your preferences and requirements.

Setting options for SIMATIC PDM

Select the menu command **Options > SIMATIC PDM > Settings...**

Settings	Tab	Notes
Device parameters	"General" tab (Page 152)	Display of the device parameters
Communication	"Communication" tab (Page 153)	Settings for communication
Download procedures	The "Download" tab (Page 154)	Selection of information for download procedures
Device Integration Manager	"Device Integration Manager" tab (Page 154)	Settings for the Device Integration Manager
Maintenance project	"Maintenance" tab (Page 156)	Settings for the maintenance station project
Service	"Service" tab (Page 156)	Settings for expert mode of SIMATIC PDM

See also

"Settings" for the SIMATIC project (Page 54)

8.4.1.2 "General" tab

Purpose

You can set the display of the device parameters in this tab.

Area	Field	Explanations/instructions
Project	"Use "message" as "long TAG" for HART devices with HART Revision < 6" check box	If this check box is activated, the string stored in the "Message" parameter is sent as a "Long TAG" for HART devices with a HART revision prior to V6.
File paths	HTML transformation file	Xsl file which includes the information for display in HTML format.
	Path for "Export" files	Storage path for files created with the "Export" function.
	Path for "Document Manager" files	Storage path for "Document Manager" files
	Path for "Message protocol" files	Storage path for "Message protocol" files

8.4.1.3 "Communication" tab

Purpose

The following communication settings can be made in this tab:

Field	Explanations/instructions
Cycle time (default value: 1000 ms)	Updating of the values shown in the "Process value display" dialog box is carried out in accordance with the time interval entered here. Note: You can change the cycle time value for periodic communication jobs. We recommend against significantly reducing the cycle time unless absolutely necessary.
Identity	If the "Identity check" check box is activated, SIMATIC PDM performs an identity check automatically each time there is any online communication.
Device diagnostics	If the "Diagnostics update" check box is activated, SIMATIC PDM performs device diagnostics automatically each time there is any online communication.
HART communication	If the "SHC mode active" option is activated, SIMATIC PDM independently detects for the analog channels of HART remote I/Os whether the SHC function (uninterrupted HART command sequence) as per the "HART on PROFIBUS" specification from the "PROFIBUS & PROFINET International (PI)" fieldbus organization is supported. - SIMATIC PDM is able to use SHC mode, if the HART module of the remote I/O supports this mode. This results in shorter reading and writing times for the parameter data of HART field devices. - If the HART module of the remote I/O does not support SHC mode, the conventional communication method is used instead. Note: Communication with HART field devices aborted: If communication with individual HART field devices is aborted repeatedly when this option is used, you should deactivate it when working with the HART field devices concerned.

Identity check and device diagnostics

Note

Reduction of times for servicing or loop check

You can reduce the load / read times by up to 20 seconds if you deactivate the ID check and device diagnostics. You may also use the "Update diagnostic status (Page 144)" function for diagnostics.

- During any communication with the field device, identity is checked and the diagnostics is updated.
- You have the option of disabling these functions
- Manually updating the diagnostics is still possible

8.4 "Options" menu

8.4.1.4 The "Download" tab

On the "Download" tab, specify which information you want to be displayed during loading processes.

"Upload to PG/PC" area

Check box	Explanations/Operating instructions
Save parameter set in the project data regardless of transmission errors	Saves the configured parameters even if individual parameters could not be loaded from the device.
Save inconsistent parameter sets in project data.	Saves the parameters received from the device, even if individual parameters have invalid values (for example, range limit exceeded).
Execute even if the device TAG does not match the project data TAG	Executes the action even if the device identifiers in the device and in the project data differ.

"Download To Device" area

Check box	Explanations/Operating instructions
Reset Changed Configuration Flag	Resets the change flag after successfully loading a device.
Download inconsistent parameter sets to the device.	Writes parameter values to the device, even if the values are invalid (e.g. range exceeded).
Execute even if the device TAG does not match the project data TAG	Executes the action even if the device identifiers in the device and in the project data differ.

"Execute load without info dialogs" check box

If this check box is selected, information dialogs are not displayed during download. This setting applies to all loading processes.

8.4.1.5 "Device Integration Manager" tab

You can open the configuration dialog for the Device Integration Manager by selecting the menu command **Options > SIMATIC PDM > Settings...** in SIMATIC Manager and then opening the "Device Integration Manager" tab.

Visible columns	Displayed information
Status	Status of the device description integration
Path	Catalog path of the devices for which a device description was found.
Device name	Device name
Manufacturer	Manufacturer
Communication	Communication type for the connection to the field device.

Visible columns	Displayed information
Device class	Hierarchical name of the device type (e.g. flow sensor)
New version	Version of the device description which was read in from a device description library.
Integrated version	Version of the device description that is integrated in SIMATIC PDM.
Integrated on	Date on which a device description was integrated into SIMATIC PDM.
Description	Descriptive text from the device description
Type ID	ID for a device type in hexadecimal format
GSD File	Name of the communication description file
New EDD revision	Revision of the imported device description
Integrated EDD revision	Revision of the integrated device description
New device revision	Device revision of the device description that was read from a device description library. Devices of the associated device type with this device revision can be interpreted in SIMATIC PDM.
Integrated device revision	Device revision of the device description which is integrated in SIMATIC PDM. Devices with this device revision of the device type can be interpreted in SIMATIC PDM.
Device library	Revision of the device description library (EDD library), from which the device description of the associated device has been read in.

* Columns marked in bold are selected by default.

Use the following buttons to speed up the configuration process:

- Select all (select)
- Deselect all
- Reset selection

"Actions during device integration" area

Options	Explanations/instructions
"Check semantics" check box	If this check box is activated, the Device Integration Manager checks the device description files for semantic errors during the integration process.
"Compile DD after import" check box	If this check box is activated, the individual device descriptions are compiled for SIMATIC PDM during the actual integration process. Note: Integrated device descriptions that have not yet undergone compilation are compiled automatically when a device type is opened in SIMATIC PDM for the first time.

8.4.1.6 "Maintenance" tab

Purpose

In this dialog box, you specify the path to the project of a maintenance station for the use of a maintenance station.

Field	Explanations/instructions
"Maintenance project" input box	You can enter the path for the maintenance project in this input box.
"Assign current project" button	Click this button to use the currently open project as the project for the maintenance station.
"Send maintenance alarm to MS station" check box	Activate this check box if you want maintenance alarms to be sent to the Maintenance Station.

Additional information

You can find information on working with the maintenance station in the configuration manual titled *Process Control System PCS 7 Operator Station*.

8.4.1.7 "Service" tab

Purpose

Service options for EDD developers are activated in this dialog box. A "Debug log" is created if you select any of the options.

NOTICE
System analysis for experts
We recommend that you only enable logging if instructed to do so by the hotline.

Trace mode

Field	Explanations/Operating instructions
User	If this check box is activated, user actions are logged.
Errors	If this check box is activated, a log is started when an error occurs. The first error message and any subsequent ones are all logged.
Warnings	If this check box is activated, a log is started when a warning occurs. The first error message or warning and any subsequent ones are all logged.

Field	Explanations/Operating instructions
Communication	If this check box is activated, a log is started. The first error message or warning and any subsequent ones are all logged. In the "Communication" tab, you can specify what types of notes are recorded in the communication log.
Details	If this check box is activated, a log is started when SIMATIC PDM is launched. The first message and any subsequent messages, warnings, and errors are all logged.
EDD	Expert mode - Activate messages for analyzing device descriptions
Object Manager	Expert mode - Activate specific system messages for analysis

Trace Level

Field	Explanations/Operating instructions
Details	If this check box is activated, a log is started when SIMATIC PDM is launched. The first message and any subsequent messages, warnings, and errors are all logged.
Warnings	If this check box is activated, a log is started when a warning occurs. The first error message or warning and any subsequent ones are all logged.
Errors	If this check box is activated, a log is started when an error occurs. The first error message and any subsequent ones are all logged.
Nothing	Deactivates expert mode for Trace level

Trace Function Type

The expert options for the errors are activated in this dialog box.

We recommend that you only activate the protocol upon instruction to do so from hotline.

Tools for EDD development

Field	Explanations/Operating instructions
Displaying EDD IDs	If this check box is activated, the parameter table shows the variable IDs of the EDD.
Open online dialogs offline	If this check box is activated and there is no connection with the device, no error message pertaining to the connection status will be output; the online dialog will open instead. The values displayed are those saved in the project or the EDD.

Menus and dialog boxes for SIMATIC PDM in HW Config

9

Installing SIMATIC PDM makes additional functions available in the **Edit > PDM** menu of HW Config.

See also

Export ... (Page 142)

Import ... (Page 143)

Download to device (Page 143)

Uploading to PG/PC (Page 144)

Update diagnostic status (Page 144)

"Interconnection Editor" dialog box (Page 81)

Notes, Tips & Tricks

10.1 Information on Configuration and Parameter Assignment

This section contains notes that provide additional information in particular cases. You should also read the information in the file *pdmbase-readme*. This file is usually available in the folder ... \Siemens\SIMATIC_PDM.

Bus parameters

For information on specific settings for the bus parameters made in the **Set PG/PC Interface** program, you need to read the *pdmbase-readme* file.

PROFIBUS PA profile devices

Using profile parameter assignment (profile EDD)

The following procedure applies to profile devices for which there is no EDD in the device description catalog and for which you want to use your own device-specific GSD file (device master file):

1. Import the device-specific GSD file required for the master configuration.
Following the import, you can find this device-specific GSD file for the field device in the hardware catalog under .. \ Additional field devices".
2. Place the field device in the DP/PA master system.
3. Assign a suitable profile device description (EDD) to the field device.
You can find information on this in the section "Device selection (Reassign) (Page 145)".

Using profile communication (profile GSD)

The following procedure applies to profile devices for which a profile GSD file and a custom device-specific device description (EDD) are to be used for parameter assignment:

1. Place the profile GSD file required for the master configuration in the DP/PA master system.
2. Assign a suitable device description to the field device.
You can find information on this in the section "Device selection (Reassign) (Page 145)".

Block configuration of HART devices

HART devices are configured using general parameters and parameters that are assigned to blocks. For example, some pressure transmitters can measure the temperature as well. For such a device, you set the number of blocks and the number of inputs/outputs to two each. SIMATIC PDM supports devices having up to six blocks. The number of inputs/outputs is limited to a maximum of four by the HART definition. The online dialog of the **Block assignment** can be used to assign I/O to the blocks. This online dialog box is only supported by devices that allow inputs/outputs to be assigned to blocks.

Basic configuration of HART devices

The basic configuration of HART devices (in the "SIMATIC PDM Device Selection" dialog box under **HART > Universal > Standard**) includes the range of functions that are defined by HFC in the Universal Commands and the Common Practice Commands.

10.2 Transferring data over industrial Ethernet

Difference between routing and data record routing

"Routing" refers to the transmission of data beyond network limits. A transmitter sends information across network boundaries to a receiver. Particular equipment engineering is required for this function to work.

Data record routing is a routing function which is used exclusively by SIMATIC PDM . Only S7-400 CPU modules with a firmware version of V5.1 or higher meet the requirements. Appropriate interfaces could be internal CPU interfaces, communication processors (e.g. CP 443-5 EXT) or external equipment (e.g. IE/PB-Link). You can find information on the suitability of modules in the associated operating instructions.

Data sent by means of data record routing could comprise the following:

- Parameter assignments of the communication devices concerned
- Device-specific information (e.g. setpoints, limits, or similar)

With data record routing, the structure of the destination address depends on the contents of the data, i.e. on the device for which the data has been determined. The field devices themselves do not have to support data record routing, since these devices do not forward the information they receive.

IE/PB-Link in connection with S7 stations

You need an IE/PB-Link to go establish a connection via Ethernet to a DP device at an S7-300 or at the internal DP interface of S7-400 up to firmware V5.1 . The link provides the data record gateway for the plant. An IE/PB-Link must be created for each DP line in the project.

To commission the IE/PB-Link , you must assign an IP address to the link. To do this, you connect the IE/PB-Link with the Engineering Station via Ethernet.

- The IE/PB Link PN IO is supplied with a fixed MAC address. If not configured, the IE/PB Link PN IO is accessible via this MAC address (requires Ethernet port).
- An IP address is automatically assigned during the configuration process. This IP address is later transferred to the IE/PB Link PN IO (IO device) when the PROFINET IO controller starts up.
- Please assign a device name to the IE/PB Link PN IO so that the IO controller is able to identify the IO device during this process. In the SIMATIC Manager or in HW Config, simply select the menu command **Target system > Edit Ethernet nodes...** .
(Please consult the online help in STEP 7 for details about this process.)

Requirement

For the SIMATIC project, an IE/PB-Link is created in a SIMATIC 300 station.
(Hardware catalog under "SIMATIC 300 > Gateway > IE/PB Link PN IO)

Procedure

1. In SIMATIC Manager, select the menu command **Target system > Edit Ethernet nodes....**
The dialog box "Edit Ethernet nodes..." opens.
 2. Enter the MAC address of the IE/PB-Link in the "Ethernet node" section or click the "Browse..." button to search for and select the IE/PB-Link.
 3. Assign the corresponding IP parameters to the IE/PB-Link.
 4. Open HW Config.
 5. Parameterize the Ethernet connection and the DP interface with the values that apply to the project.
 6. On the "Operating Mode" tab, select the "No DP" checkbox. The IE/PB-Link now operates like a PG/PC.
 7. After having configured and programmed all stations, select the **Network > Save and Compile** command in order to generate all routing tables.
 8. To communicate via Ethernet, you select the TCP/IP protocol in the programming device/PC interface settings for the CP 1613 or other network card that will be used for communication.
 9. Create another programming device/PC parallel to the stations in the component view, and configure an Ethernet interface in this programming device/PC.
 10. Assign this interface to the interface configured under the programming device/PC interface.
- Now when you open the hardware configuration for a SIMATIC 300 station, communication to the devices will also function via Ethernet.

IE/PB-Link in connection with third-party systems

In order to be able to use systems made by third-party manufacturers, you will have to configure a SIMATIC 300 or SIMATIC 400 station as a "dummy" station. For this purpose, a simple configuration consisting of a rack, PS, CPU and DP interface will be sufficient. The devices will then be distributed on the DP lines of this station just as they are connected to the third-party masters.

Select the DP settings on the third-party master so that the token routing is performed through two masters (the third-party master and the IE/PB-Link).

Like in an S7 plant, one IE/PB-Link per DP line is also required here.

The same settings as for STEP 7 stations apply for establishing communication. You need a programming device/PC with an Ethernet interface.

10.3 HART applications

System environment

Implementation of intelligent field devices with HART functionality requires the following system environment (see the figure below):

- **Current loop 4 - 20 mA**
- **HART configuration tool:**
The HART parameters can be set using an external handheld panel (HART Handheld) or a HART configuration tool (SIMATIC PDM). The configuration tool deploys the HART analog module, whereas the HART Handheld is connected directly in parallel to the field device.
- **HART system integration:**
The HART analog module assumes a "master" function by receiving the commands from the HART configuration tool. It then transfers these commands to the intelligent field device and returns corresponding response frames. The interface of the HART analog module is formed by data records which are transferred via the I/O bus. The HART configuration tool must generate and interpret the data records.
- **IM153-2 head-end station for the HART configuration tool:**
Head-end station for PROFIBUS DP, which supports master class 1 and master class 2 functionality.

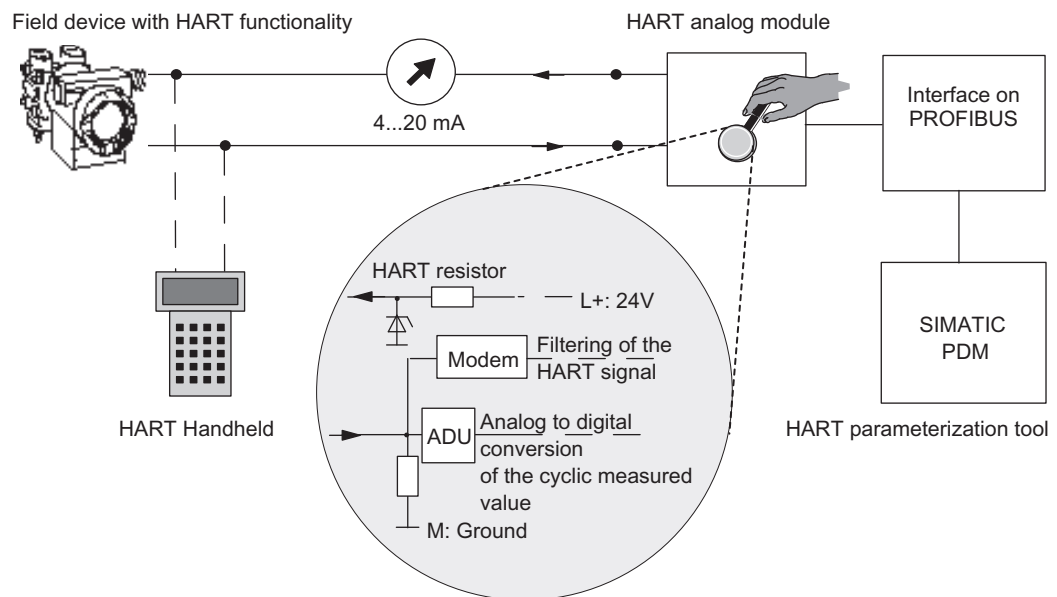


Figure 10-1 System environment: Use of HART

Appendix

A.1 Communication Problems

If communication problems occur, you should check for the following:

Connecting

- **Configuration**
 - Is the programming device or PC interface configured correctly? The SIMATIC Manager menu command **Options > Set PG/PC Interface** or the Windows Control Panel can be used to set the PG/PC interface parameters.
 - If you are not performing configuration in HW Config: Is the correct interface assigned to the PC? Is this interface assigned to the correct network? Check the assignment by selecting the interface and the required network with the menu command **Edit > Object Properties** in the "Communication" tab.
 - In case of routing: Is a programming device/PC included in the project in the component view? Is the correct interface assigned to the programming device/PC?
 - Are the addresses (address, slot, channel) assigned correctly and uniquely in the project?
- **Hardware structure**
 - Is the system complete and has it been cabled correctly? Are all the connectors plugged in correctly? Are the modules inserted correctly?
 - Are all the modules and devices of the plant supplied correctly?
 - Are there low-or high-frequency interference in the system? Is the system subject to the influence of electromagnetic fields?
 - Is there a short circuit on the bus or a wire break in a wire leading to the device?
- **Addressing the devices**
 - Are the addresses (address, slot, channel) set correctly for the devices in the system?
 - Do the addresses set on the devices agree with the configured addresses?
The address settings are made on the devices via parameter assignments, hardware switches, or a combination of both.
The device address can be set by means of SIMATIC PDM for some field devices (PROFIBUS DP/PA and FF). You can find additional information on this in the section "Delivery contents (Page 19)".

- **Consistent project engineering and configuration in the CPU and CP**
 - The project engineering settings loaded to the CPU or to a CP must match the configuration. The routing tables for the project/multiproject must have been created and all components loaded in the network configuration (NetPro).
To load the configuration to the CPU or to a CP, select the HW Config menu command **Target system > Download to module > Target module**.
- **Maximum number of connections**
 - Devices or communication components can only manage a restricted number of open connections. It is therefore possible that connections cannot be established. To open new connections to devices, close S7 applications. For information on the maximum number of connections permitted, refer to the respective device manuals.
 - At least two connections must be supported simultaneously for remote I/Os to enable communication with the connected HART devices.

Communication Errors

Communication errors can occur when using standard device descriptions, for example, HART Universal Standard descriptions.

- The reason for this may be an unsuitable device assignment. If this is the case, assign a suitable device in the network or plant view.
You can find additional information on this in the following sections:
 - Section "Delivery contents (Page 19)"
 - Section "Replacing devices (Page 77)"
- Another reason may be that the device does not fulfill or fully implement the standard. Contact the device manufacturer in this case.

Broken Connection

- **Reset functions**
 - Was a reset function triggered in the device? A reset can be triggered manually or by the firmware of the device (for example, in case of hardware errors or incorrect program execution). The reset can block the device in a defined "safe" operating state or trigger a restart of the program with initial settings. These initial settings can differ from the desired settings, for example, different address or transmission rate.
- **Disturbances**
 - Do low-or high-frequency interference occur in the system or is the plant subject to the influence of electromagnetic fields? Has the power supply of the system, of parts of the system or of devices been disconnected? Have connectors been withdrawn or plugged in elsewhere?

Note

If any other communication problems occur, contact the device manufacturer.

A.2 Message window

A.2.1 "Decision on error" dialog box

You can obtain the specific information you need from the dialog box; if necessary, contact the hotline.

A.2.2 "Error history" dialog box

You can obtain the specific information you need from the dialog box; if necessary, contact the hotline.

A.2.3 "Error" dialog box

You can obtain the specific information you need from the dialog box; if necessary, contact the hotline.

A.2.4 "Multiple errors" dialog box

You can obtain the specific information you need from the dialog box; if necessary, contact the hotline.

A.2.5 "Messages" Dialog Box

Purpose

Messages about the following points are displayed in this dialog box.

- Communication problems
- Export/import
- DIM
- Device descriptions

You can obtain the specific information you need from the dialog box; if necessary, contact the hotline.

Index

Dialogs, 50
Keyboard operation, 50

"

"Communication" Tab ("Settings" dialog box), 153
"Device" Tab ("Properties" dialog box), 130, 141
"Diagnostics" Tab ("Properties" dialog box), 131, 141
"General" tab ("Properties" dialog box), 130, 140
"Import" dialog box, 120
"Insert SIMATIC PDM Object(s)" dialog box, 147
"Log" tab ("Settings" dialog box), 156
"Maintenance Station" Tab, 156
"Messages" dialog box, 167
"Table" Tab ("Settings" dialog box), 152

A

About... (Help menu), 38
About... (Help Menu) , 137
Add-ons for SIMATIC PDM, 18
Alarm log
 Save, 101
Asset service
 Several PCS 7 projects, 115

C

Communication, 95
 Secure, 95
Complete the device information, 35
Configuration, 62
Configure
 Networks and devices, 14
Contents (Help Menu), 38, 137

D

Delete (File menu), 36
Device
 Read in number, 31
Device description file
 EDD, 12

Device description files
 Compiling, 155
Device integration
 Compile EDD, 155
 Compiling device description files, 155
 Semantics, 155
 Settings, 155
Device Integration Manager
 Configuring, 154
 Settings, 154
Device libraries, 19
Device menu, 122, 124, 128, 143, 144
Devices, 71, 73
 Integration in HW Config, 71, 73
Diagnostic information, 91
Diagnostics, 91
Display
 Process values, 132
Display process values, 132
Download to devices (Device menu), 122, 143
Downloading, 84

E

EDD
 Device description file, 12
Exit (File menu), 36, 121
Export file
 XML, 87

F

File
 Export, 87
 Exporting, 87
 Import, 87
 Importing, 87
File menu, 36, 121
File Menu, 117
Format
 Alarm log, 101
 Export, 87
 Import, 87
 XML, 87
 XSL, 87

H

- Help
 - Trends, 111
- Help menu, 38
- Help Menu, 38, 137
- Help on Device Parameters (Help Menu), 137
- HW Config, 71, 73
 - Download to devices , 122, 143
 - Export, 117, 143
 - Import, 119, 143
 - Integrating Devices, 71, 73
 - Start Interconnection Editor, 81
 - Update diagnostic status, 135, 144
 - Upload to PG/PC, 124, 144

I

- Icons, 28, 44, 93, 126
 - Configuration, 93
 - Device, 93
 - Diagnostics, 93
 - Download To Device, 123, 136
 - Maintenance, 93
 - Operating mode, 93
 - Process value, 93
 - Toolbar, 28, 44
 - Upload to PG/PC, 44, 126
- IE/PB link, 162
- Import file, 87
- Integrate, 67
 - PROFIBUS device in SIMATIC PDM, 67
- Interconnection Editor
 - Starting, 81
- Introduction, 9
 - SIMATIC PDM, 9

L

- Liability, 19
- Load FF segment
 - Tab, 84

M

- Maintenance Station
 - Several PCS 7 projects, 115
- Measured value display
 - Process variables, 132

- Messages, 35

O

- Options menu, 114, 152

P

- Parameter, 46, 47
- Parameter table, 46, 47
- Parameter Table, 47
- PDM
 - Readme, 10
- Process device network view, 149
- Process variables
 - Measured value display, 132
- PROFIBUS device in SIMATIC PDM, 67
 - Integrate, 67

R

- Readme, 10
- Redundancy
 - Cancel , 75
 - Field devices, 74
- Routing, 57

S

- Save (File Menu), 117
- Scope, 11
- Secure Communication, 95
- Settings
 - Device integration, 155
 - Device Integration Manager, 154
 - Semantics, 155
 - SIMATIC PDM, 114, 152
- Several PCS 7 projects
 - Asset service, 115
- Shortcut menu
 - Complete the device information, 35
 - Messages, 35
 - Remove device description(s), 35
- Shortcuts for menu commands, 50

- SIMATIC Manager
 - Download to devices, 122, 143
 - Upload to PG/PC, 124, 144
 - Export, 117, 143
 - Import, 119, 143
 - Start Interconnection Editor, 81
 - Update diagnostic status, 135, 144, 145
- SIMATIC PDM, 67
 - Integrating a PROFIBUS device, 67
 - Start Interconnection Editor, 81
- SIMATIC PDM
 - Download to devices, 122, 143
 - Export, 117, 143
 - Import, 119, 143
 - Update diagnostic status, 135, 144, 145
 - Upload to PG/PC, 124, 144
- Status, 47
- Status bar, 31, 47
- T**
- Tab
 - Load FF segment, 84
- Transformation file
 - XSL, 87
- Trend
 - (View menu), 106, 107
 - Adjust display range, 110
 - Capture, 110
 - Help, 111
 - Link axes, 111
 - Move axis, 111
 - Move ruler, 110
 - Ruler, 110
- Trends
 - (View menu), 134
- U**
- Unit, 47
- Update diagnostic status, 135, 144, 145
- Upload to PG/PC (Device menu), 124, 144
- V**
- Value, 46
- View menu
 - Speedometer chart, 106
 - Trend, 106, 107, 134
 - x-y charts, 104
 - y-t charts, 104
 - Process variables, 132
- Views
 - Correlation, 80
 - Exception, 80

