SIEMENS

SIMATIC

Process Control System PCS 7 Help for SIMATIC PDM V9.2 SP2

Operating Manual

SIMATIC PDM V9.2 SP2

Security information 1

Preface 2

Using SIMATIC PDM 3

Installation 4

PDM Exportfile Converter 5

Integrating devices into SIMATIC PDM 6

Views 7

Functions 8

Menus and dialog boxes in SIMATIC PDM 9

Menus and dialog boxes for SIMATIC PDM in HW Config 10

Menus and dialog boxes for SIMATIC PDM in the SIMATIC Manager 11

SIMATIC PDM Server option 12

Notes, Tips & Tricks 13

Appendix A

06/2022
A5E50080762-AC

Legal information

Warning notice system

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

⚠ DANGER

indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ WARNING

indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

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

Qualified Personnel

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

Proper use of Siemens products

Note the following:

⚠ WARNING

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

Trademarks

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

Disclaimer of Liability

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

Siemens AG
Digital Industries
Postfach 48 48
90026 NÜRNBERG
GERMANY

A5E50080762-AC
Ⓟ 05/2022 Subject to change

Copyright © Siemens AG 2022.
All rights reserved

Table of contents

1 Security information 11

2 Preface 13

3 Using SIMATIC PDM 15

3.1 Conditions for secure operation of SIMATIC PDM 15

3.2 Introduction 17

3.3 Using the documentation 18

3.4 Contact partner 19

3.5 Basis for using intelligent field devices 20

3.6 Establishing connections to field devices 22

3.7 Product structure 26

3.7.1 Product packages for SIMATIC PDM 26

3.7.2 Options 28

3.7.3 Delivery contents 31

4 Installation 33

4.1 Compatibility 33

4.2 Installing SIMATIC PDM 34

4.3 Preparing SIMATIC PDM 37

4.4 Setting the language 38

4.5 Reinstalling / Removing SIMATIC PDM 39

5 PDM Exportfile Converter 41

5.1 "PDM Exportfile Converter" dialog box 41

6 Integrating devices into SIMATIC PDM 43

6.1 Device Integration Manager 43

6.2 "Device Integration Manager" main window 45

6.3 Views 46

6.3.1 Title bar 46

6.3.2 Menu bar 46

6.3.3 Toolbar 47

6.3.4 Device list 48

6.3.5 Status bar 51

6.3.6 Source folder 51

6.3.7 Applying a filter 52

6.3.8 Filter file/Project filter 52

6.4 Working with the Device Integration Manager 54

6.4.1 Integrating device descriptions 54

6.4.2 Completing a device description ... 55
6.4.3 Creating your own device library using the project filter ... 56
6.4.4 Creating your own device library from a collection of device descriptions ... 57
6.4.5 Removing device descriptions ... 57
6.4.6 Update / upgrade of device descriptions (EDD update) ... 58
6.4.7 Messages ... 58
6.4.8 Checking syntax and semantics. ... 58

6.5 Menus and dialog boxes ... 60
6.5.1 File ... 60
6.5.1.1 Read device descriptions from source directory ... 60
6.5.1.2 Read device descriptions from compressed source ... 60
6.5.1.3 List of integrated device descriptions ... 61
6.5.1.4 List of device descriptions used ... 62
6.5.1.5 Save device list ... 62
6.5.1.6 Print device list ... 62
6.5.1.7 Deleting the device list ... 63
6.5.1.8 Exit ... 63
6.5.2 View ... 63
6.5.2.1 Split device list window ... 63
6.5.3 Catalog ... 65
6.5.3.1 Complete device information ... 65
6.5.3.2 Integrate ... 65
6.5.3.3 User-specific device DVD ... 66
6.5.3.4 Filter file ... 66
6.5.3.5 Project filter ... 67
6.5.3.6 Messages ... 68
6.5.3.7 Find ... 68
6.5.4 ? (Help) ... 69
6.5.4.1 Help ... 69
6.5.4.2 Info ... 69

7 Views ... 71

7.1 Introduction ... 71

7.2 Views in SIMATIC Manager ... 72
7.2.1 Process devices plant view ... 72
7.2.1.1 Opening the process devices plant view ... 72
7.2.1.2 Messages ... 72
7.2.1.3 Adapting the process device plant view ... 73
7.2.1.4 Operation View ... 73
7.2.2 Process devices network view ... 73
7.2.3 Project synchronization ... 74

7.3 Views in SIMATIC PDM ... 75
7.3.1 Main Window "SIMATIC PDM" ... 75
7.3.2 Title bar ... 76
7.3.3 Menu bar ... 76
7.3.4 Toolbar ... 77
7.3.5 Structure view ... 77
7.3.6 Parameter table ... 78
7.3.6.1 "Parameter" column of the parameter table ... 79
7.3.6.2 "Value" column of the parameter table ... 79
7.3.6.3 "Unit" column of the parameter table ... 80

7.3.6.4 "Status" column of the parameter table ... 80
7.3.6.5 Distributing parameters ... 81
7.3.7 Status bar ... 82
7.3.8 Display ... 83
7.3.8.1 Display in the views ... 83
7.3.8.2 Stand-alone device view ... 83
7.3.8.3 Multiple devices view ... 84
7.3.9 Keyboard operation ... 85

8 Functions ... 87

8.1 Introduction ... 87

8.2 Project editing ... 89
8.2.1 "Settings" for the SIMATIC project ... 89
8.2.2 Setting the interface on the computer ... 91
8.2.3 Plant-wide communication by means of routing ... 91
8.2.4 Checking the device integration ... 92
8.2.5 Print ... 93
8.2.6 Cleaning the project (reorganization) ... 94
8.2.7 Saving the configuration ... 95

8.3 Device management ... 96
8.3.1 Inserting devices ... 96
8.3.1.1 Inserting objects ... 96
8.3.1.2 "Insert object - ..." dialog box ... 97
8.3.1.3 "Insert Object - Assign Device Type" dialog box ... 98
8.3.1.4 Integrating a device in HW Config ... 100
8.3.1.5 Setting the bus address in HW Config ... 103
8.3.1.6 Integrating a HART device in a HART modem network ... 103
8.3.1.7 Integrating a MODBUS device in a MODBUS network ... 105
8.3.1.8 Integrating an S7 DSGW gateway ... 106
8.3.1.9 Integrating a HART server network ... 108
8.3.1.10 Compact PROFIBUS device (sensors and actuators) ... 114
8.3.1.11 Modular PROFIBUS device (remote I/O) ... 115
8.3.1.12 Connecting a field device to PROFINET ... 117
8.3.1.13 HART device on remote I/O ... 118
8.3.1.14 Inserting a HART device at a HART module ... 121
8.3.1.15 Integrating an FF field device ... 121
8.3.2 Field devices with redundant bus connection ... 122
8.3.2.1 Connecting field devices to a redundant bus system ... 122
8.3.2.2 "Select object" dialog box ... 123
8.3.2.3 "Properties - Find object" dialog box ... 123
8.3.3 Using unspecified PROFIBUS PA devices as placeholders ... 123
8.3.4 Creating typicals for parameters (import without ID data) ... 124
8.3.5 Replacing devices ... 125
8.3.6 Inserting plant-specific documents for process mode ... 126
8.3.7 Operating modes of field devices ... 127
8.3.8 Deleting devices ... 128
8.3.9 Assigning parameters and downloading to devices ... 128
8.3.10 Interconnecting and downloading FF devices ... 129
8.3.10.1 "Interconnection Editor" dialog box ... 129
8.3.10.2 Downloading objects in the FF segment ... 131
8.3.11 Printing as PDF ... 133

8.4 Communication ... 134
8.4.1 Saving/reading the device data ... 134

8.5 Export / Import ... 136
8.5.1 Introduction ... 136
8.5.2 Exporting configuration and parameter assignment data ... 139
8.5.3 Importing configuration and parameter assignment data ... 140

8.6 Diagnostics ... 143
8.6.1 Field device diagnostics ... 143
8.6.2 Overview of Device Icons ... 144
8.6.3 Connection diagnostics ... 147
8.6.4 Identity check ... 147
8.6.5 Updating diagnostics ... 147

8.7 LifeList ... 149
8.7.1 Working with the LifeList ... 149
8.7.2 Licensing ... 153
8.7.3 Menus and dialog boxes ... 154
8.7.3.1 "File" menu ... 154
8.7.3.2 "Edit" menu ... 155
8.7.3.3 "Device" menu ... 156
8.7.3.4 "View" menu ... 158
8.7.3.5 "Options" menu ... 158
8.7.3.6 "Help" menu ... 158
8.7.4 Menu bar ... 159
8.7.5 Toolbar ... 159
8.7.6 Status bar ... 160

8.8 Logs ... 161
8.8.1 Message log ... 161

8.9 Graphical displays ... 163
8.9.1 Graphical display of values ... 164
8.9.2 Trend chart ... 165
8.9.3 Bar chart ... 167
8.9.4 Tachometer chart ... 168
8.9.5 Icons and buttons ... 169
8.9.6 Work with trends ... 172
8.9.7 Editing trends ... 173

8.10 Asset management ... 175
8.10.1 Asset management ... 175
8.10.2 Use with the PCS 7 Maintenance Station ... 176

8.11 Extended parameter selection ... 179
8.11.1 Working with "Extended parameter selection" ... 179
8.11.2 Menus and dialog boxes ... 183
8.11.2.1 "File" menu ... 183
8.11.2.2 "Edit" menu ... 184
8.11.2.3 "Help" menu ... 185
8.11.3 Menu bar ... 185
8.11.4 Toolbar ... 185
8.11.5 Status bar ... 186

9 Menus and dialog boxes in SIMATIC PDM 187

9.1 "File" menu 187
9.1.1 Save 187
9.1.2 Exporting 187
9.1.2.1 "Export - ..." dialog box 188
9.1.3 Importing 191
9.1.3.1 "Import - ..." dialog box 192
9.1.4 Print 195
9.1.5 Exit 196
9.1.5.1 "Save changes?" dialog box 196

9.2 Editing (depends on device) 197

9.3 "Device" menu 198
9.3.1 Download to device 198
9.3.1.1 "Download to device - ..." dialog box 199
9.3.2 Upload to PG/PC 200
9.3.2.1 "Upload to PG/PC - ..." dialog box 201
9.3.3 Assign address and TAG 203
9.3.3.1 "Assign address and TAG..." dialog box 204
9.3.4 Value comparison 205
9.3.4.1 "Value Comparison" dialog box 206
9.3.4.2 "Select object" dialog box 207
9.3.5 Priority 207
9.3.6 Object properties 207
9.3.6.1 "General" tab 208
9.3.6.2 "Device" tab 208
9.3.6.3 "Diagnostics" tab 209
9.3.6.4 "Communication" tab 210
9.3.6.5 "Document Manager" tab 212
9.3.7 Calibration log 212
9.3.7.1 Menus and dialog boxes 214
9.3.7.2 Menu bar 219
9.3.7.3 Toolbar 219
9.3.8 Change log 220
9.3.8.1 Menus and dialog boxes 221
9.3.8.2 Menu bar 223
9.3.8.3 Toolbar 223
9.3.9 Set device checked 224
9.3.10 Check configuration 225
9.3.11 Templates... 227

9.4 "View" menu 228
9.4.1 Process variables / Measured value display (depends on device) 228
9.4.2 Start LifeList 229
9.4.3 Charts and trends (depends on device) 229
9.4.3.1 Displaying process variables and measured values 230

9.5 "Diagnostics" menu 232
9.5.1 Update diagnostics 232
9.5.1.1 "Update diagnostics - ..." dialog box 232

9.6 "Options" menu (depends on device) 234

9.7 "Help" menu ... 235
9.7.1 Contents ... 235
9.7.2 Help for device parameters ... 235
9.7.3 Info ... 235
9.7.4 Find ... 235
9.7.5 Document Manager ... 235

10 Menus and dialog boxes for SIMATIC PDM in HW Config ... 237

11 Menus and dialog boxes for SIMATIC PDM in the SIMATIC Manager ... 239

11.1 "Edit" menu ... 239
11.1.1 SIMATIC Manager > "Edit" menu ... 239
11.1.2 Object properties ... 239
11.1.2.1 "General" tab ... 240
11.1.2.2 "Device" tab ... 241
11.1.2.3 "Diagnostics" tab ... 241
11.1.2.4 "Communication" tab ... 242
11.1.2.5 "Document Manager" tab ... 244
11.1.3 SIMATIC PDM ... 244
11.1.3.1 Synchronize ... 244
11.1.3.2 Exporting ... 244
11.1.3.3 Importing ... 245
11.1.3.4 Download to device ... 245
11.1.3.5 Upload to PG/PC ... 246
11.1.3.6 Update diagnostics ... 247
11.1.3.7 Start LifeList ... 247
11.1.3.8 Device selection (Reassign) ... 247
11.1.3.9 Show change log ... 249
11.1.3.10 Synchronizing with HW Config ... 250
11.1.3.11 Import from HWC station ... 251

11.2 "Insert" menu ... 255
11.2.1 Inserting an object ... 255

11.3 "View" menu ... 258
11.3.1 Process devices plant view ... 258
11.3.2 Menus and dialog boxes in the "Process device plant view" dialog box ... 259
11.3.2.1 Toolbar in the "Process device plant view" dialog box ... 259
11.3.2.2 "File" menu ... 259
11.3.2.3 "Device" menu ... 261
11.3.2.4 Functions ... 263
11.3.3 Operation view ... 266
11.3.4 Process devices network view ... 270

11.4 "Options" menu ... 271
11.4.1 Settings for SIMATIC PDM ... 273
11.4.1.1 "General" tab ... 274
11.4.1.2 "Communication" tab ... 274
11.4.1.3 The "Load" tab ... 275
11.4.1.4 "Device Integration Manager" tab ... 276
11.4.1.5 "Maintenance Station" tab ... 277
11.4.1.6 "PDM clients" tab ... 278
11.4.1.7 "Change Log" tab ... 279
11.4.1.8 "Service" tab ... 279

11.4.2 Role management ... 280
11.4.3 HART server ... 282
11.4.4 Extended parameter selection ... 282
12 SIMATIC PDM Server option ... 283
12.1 Setting up the SIMATIC PDM Server ... 283
12.2 SIMATIC PDM Server Configurator ... 287
12.3 SIMATIC PDM Portal ... 290
12.4 Logging on to the SIMATIC PDM Portal ... 291
12.5 "SIMATIC PDM Portal" main window ... 294
12.6 Edit field device in SIMATIC PDM via the browser view ... 295
12.7 Menus and dialog boxes for SIMATIC PDM in the browser view ... 296
12.7.1 "File" menu ... 296
12.7.2 "Device" menu ... 296
12.7.3 "View" menu ... 296
12.7.4 "Diagnostics" menu ... 296
12.7.5 "Help" menu ... 297
13 Notes, Tips & Tricks ... 299
13.1 Information on configuration and parameter assignment ... 299
13.2 Connecting field devices by means of Industrial Ethernet ... 301
13.3 HART applications ... 303
A Appendix ... 305
A.1 Communication Problems ... 305
A.2 Message window ... 307
A.2.1 "Decision on error" dialog box ... 307
A.2.2 "Error history" dialog box ... 307
A.2.3 "Error" dialog box ... 307
A.2.4 "Multiple errors" dialog box ... 307
A.2.5 "Messages" Dialog Box ... 307
Index ... 309

Security information

1

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit
https://www.siemens.com/industrialsecurity.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under
https://www.siemens.com/cert.

Preface

2

Purpose of the program

SIMATIC PDM (Process Device Manager) is a general-purpose, manufacturer-independent tool for the configuration, parameter assignment, commissioning, diagnostics, and maintenance of intelligent field devices (sensors and actuators) and field components (remote I/O, multiplexers, control room devices, 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 (Page 33)
- Commissioning the software
- Procedures for configuring networks and field devices
- Procedures for commissioning and using the Runtime functions

Required basic knowledge

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

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

Knowledge about the use of 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.

Validity

This documentation is valid for the SIMATIC PDM V9.2 software package.

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 installation medium in the main folder
- On the SIMATIC PCS 7 product installation medium in the ...PDM...\PDMBASE\setup folder
- 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 the information that 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 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 when the user hovers the mouse pointer over the icons.

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

3

3.1 Conditions for secure operation of SIMATIC PDM

SIMATIC PDM must be operated within the framework of the holistic PCS 7 security concept, see PCS7 & WinCC Security concept (https://www.industry.siemens.com/topics/global/de/industrial-security/support/seiten/whitepaper.aspx) and Siemens Industrial Security (https://www.siemens.com/industrialsecurity).

In particular, SIMATIC PDM may only be used in trustworthy networks. Web clients must be operated in the same security cell or trust zone as the Web server. This also means that direct access from external networks (e.g. the Internet) is not supported and must be prevented.

Access from external networks (for example, an office network outside the process control network) to the PDM Web server (in the process control network) can be implemented using a terminal server in the perimeter network (DMZ). Users should only have minimal user rights on the terminal server. This only relates to the use of a Web browser. Secure configuration and licensing of the terminal server must be performed in compliance with the manufacturer recommendations.

When PDM is used in a virtual environment, for security purposes all virtual machines must be treated like stand-alone computers. With regard to the security concepts of PCS7 and PDM, the virtual machine has the same security requirements as a stand-alone computer. In particular, the use of a virtual environment may not result in any security measures defined and recommended within the framework of these concepts being bypassed. In addition, the use of virtual environments entails new risks that have to be assessed with regard to the system environment.

Risks to which virtual environments in particular are exposed and recommendations for the secure operation of virtual environments can be found under [1], [2], [3]. In addition, the virtual solution provider's security guidelines and security concepts must be observed.

References:

[1] Enisa Security aspects of virtualization (02/2017) (https://www.enisa.europa.eu/publications/security-aspects-of-virtualization)

[2] NIST SP 800-125A Rev. 1: Security Recommendations for Server-based Hypervisor Platforms (https://csrc.nist.gov/publications/detail/sp/800-125a/rev-1/final)

[3] NIST SP 800-125B: Secure Virtual Network Configuration for Virtual Machine (VM) Protection (https://csrc.nist.gov/publications/detail/sp/800-125b/final)

Note

Integrity of device descriptions

The import of incorrect or manipulated device descriptions may lead to an incorrect device behavior and entail a risk for the plant/system.

Ensure that device descriptions are only obtained and integrated from reliable sources.

3.2 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.

The PDM Web application can be used on mobile devices with the Android operating system.

3.3 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.

3.4 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:	Siemens Industry Online Support (http://support.industry.siemens.com/)

Questions on devices and GSD files

Please get in touch with your contact partner at the device manufacturer.
For more information, refer to the "List of integrated devices". This is available in the "_manuals" folder on the "SIMATIC PDM Device Library ..." installation medium.

Follow-up installations and additional information on SIMATIC PDM are available on the Internet at "http://www.siemens.com/simatic-pdm (www.siemens.de/simatic-pdm)".

3.5 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).

Finding the device description

You can obtain device descriptions in the following ways:

- Installation medium "Device Library ...":
  This is included with SIMATIC PDM. The Device Library includes device descriptions of the HCF library, FF library, PI library and FDI packages.
  You can find additional information on this in the *pdmbase readme* file.
- From the device manufacturer together with the device
- On the Internet
- In the device catalogs of applications that can evaluate data contained in device descriptions

Note

Device descriptions and EDD

Below, only the term "device description" will be used to refer to "EDD" (Electronic Device Description) and "DD" (Device Description). Exception: The user interface uses the terms EDD and DD.

Liability

Siemens explicitly declines any liability for damages resulting from the use of the following device description files and from interaction 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 "Device Library".
- For device description files that were integrated through catalogs.

NOTICE

Important note on the device description files included with the SIMATIC PDM

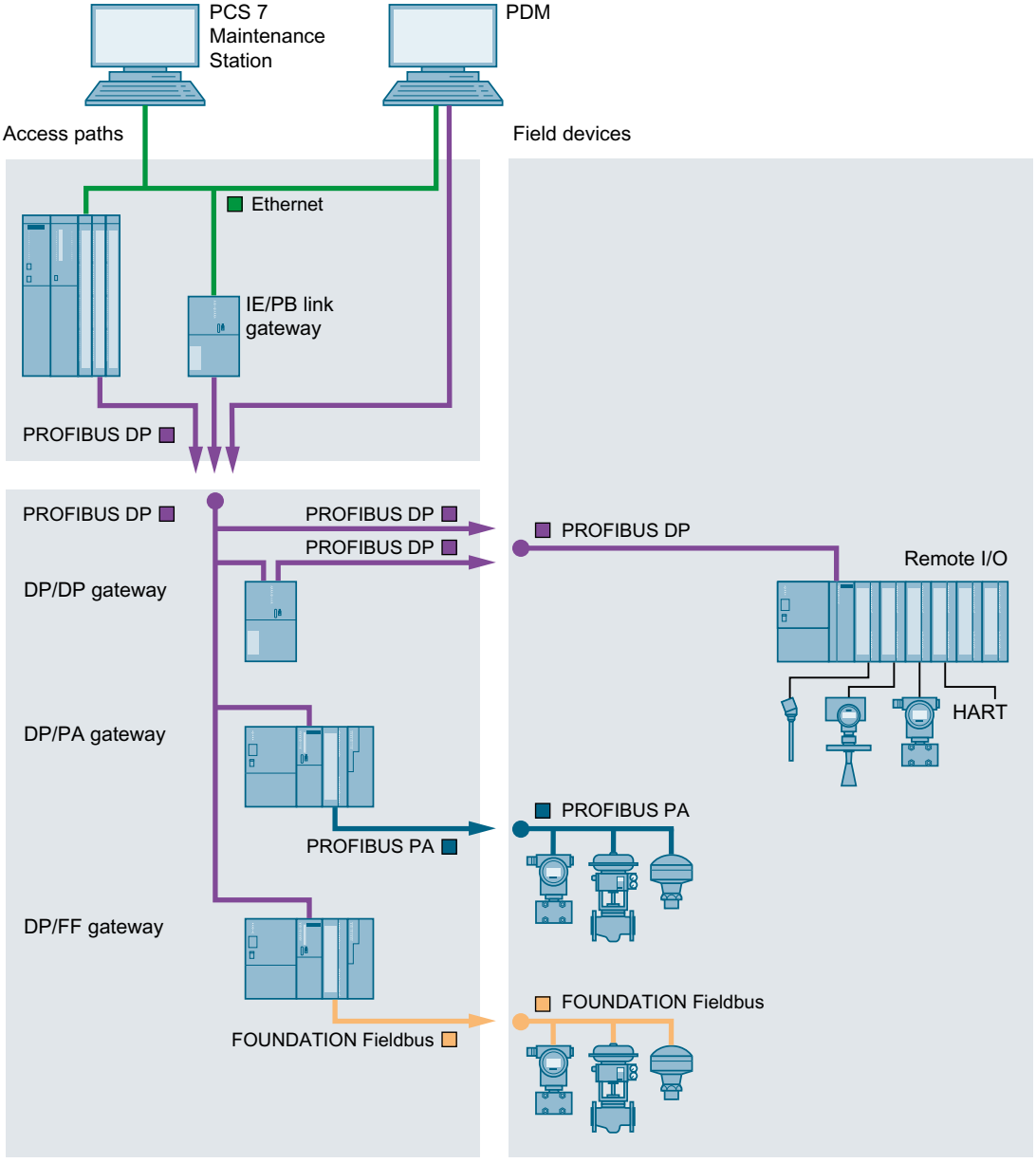
The device description files of non-Siemens field devices have not been developed by Siemens and are included with the shipped products free of charge. The licensee is entitled to use the device description files of these devices in the same manner as a trial license in accordance with the general terms 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.

3.6 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.

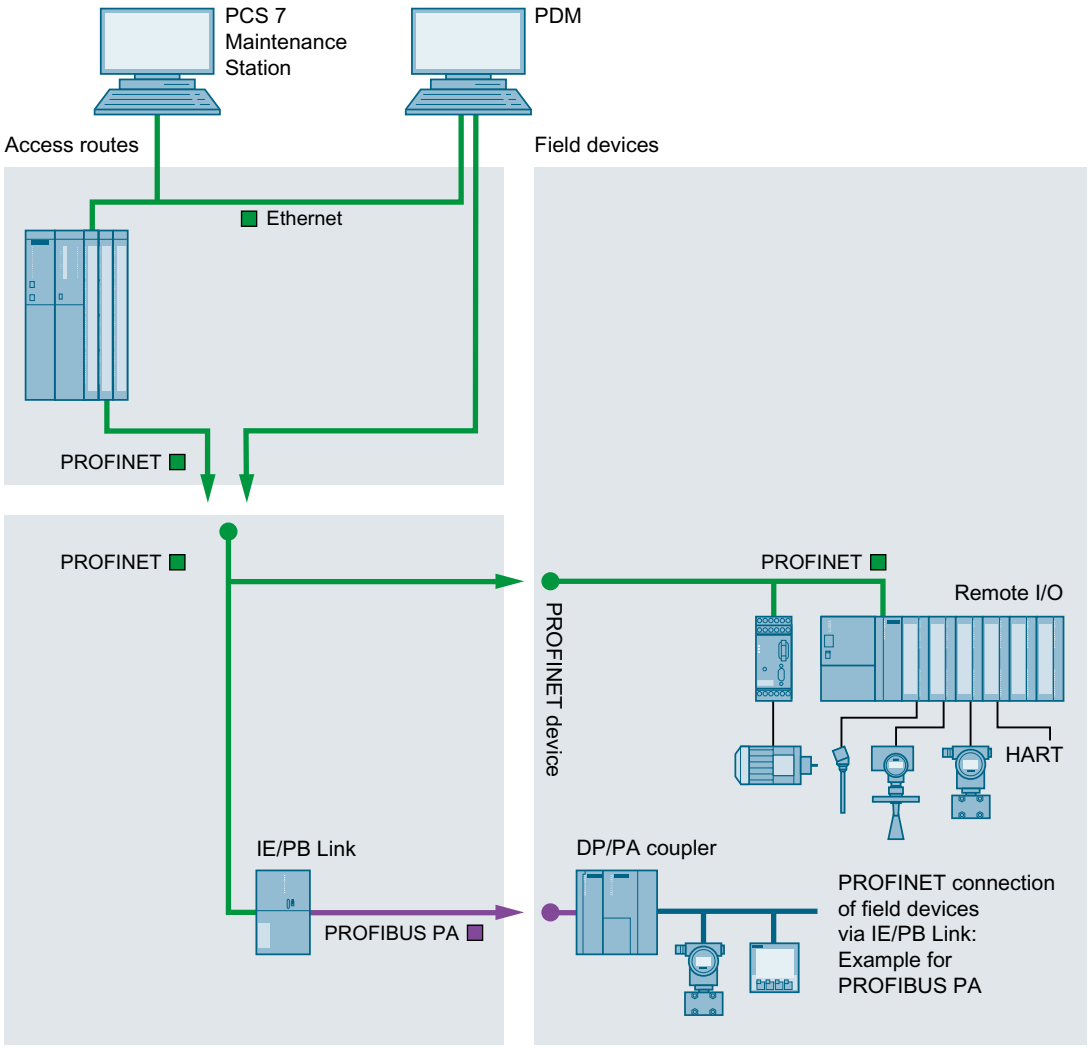
Network topologies for PROFIBUS DP

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



Network topologies for PROFINET

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



Communication paths

Note

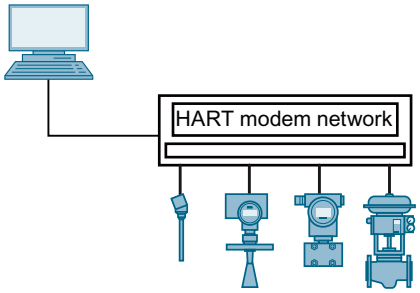
Interface with SIMATIC PDM

The PC shown is always the interface to SIMATIC PDM.

In networks with routing capability, the PC can be connected to a linked network. You can find information about this in the section "Plant-wide communication by means of routing (Page 91)".

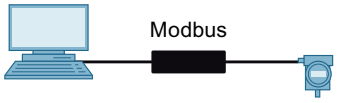
HART modem network

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



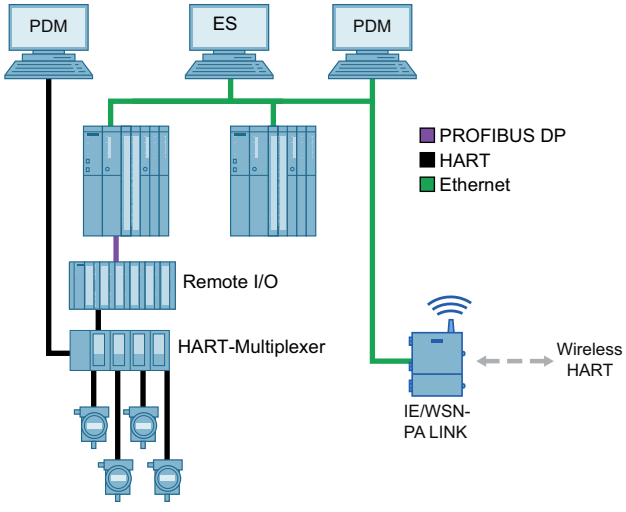
MODBUS network

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



HART server network

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



Supported networks

With this version of SIMATIC PDM, field devices are supported on the following networks:

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

- MODBUS network
- HART modem network
- HART server

Activating PDM functions

License keys are required to use SIMATIC PDM. You can expand the SIMATIC PDM functions by adding optional packages. You can find information about this in the section "Product packages for SIMATIC PDM (Page 26)".

Additional information

Section "Inserting devices (Page 96)"

3.7 Product structure

3.7.1 Product packages for SIMATIC PDM

Legend for the table:

- ● Product component is part of the product package.
- ○ Optional product component for the product package; obtainable as add-on
- \- Product component is not relevant for the product package or not available
- [1)] TAG definition (see "SIMATIC PDM TAG" in the section "Options (Page 28)")
- [2)] As of SIMATIC PDM V9.0, the license key for the "SIMATIC PDM Routing" add-on package is no longer used. Licensing for S7 DSGW is made via "SIMATIC PDM TAG". You can find information about this in the section "Options (Page 28)".
- [3)] Only for special applications, not intended for wide-spread use: Use requires programming skills.

Components	**Product packages**							
	SIMATIC PDM stand-alone				**SIMATIC PDM system integrated**			
	Minimum configuration	**Basic configuration**	**Server**	**Application-specific configurations**				
	SIMATIC PDM Single Point	**SIMATIC PDM Basic**	**SIMATIC PDM stand-alone server**	**SIMATIC PDM Service**	**SIMATIC PDM S7**	**SIMATIC PDM PCS 7**		
	V9.2	**V9.2**	**V9.2**	**V9.2**	**V9.2**	**V9.2**	**Server V9.2**	**FF V9.2**
SIMATIC PDM TAG (license included in scope of delivery[1)])	1	4	100	4 + 50	4 + 100	4 + 100	4 + 100	4 + 100
SIMATIC PDM extension options								

Components		**Product packages**							
		SIMATIC PDM stand-alone				**SIMATIC PDM system integrated**			
		Minimum configuration	**Basic configuration**	**Server**	**Application-specific configurations**				
		SIMATIC PDM Single Point	**SIMATIC PDM Basic**	**SIMATIC PDM stand-alone server**	**SIMATIC PDM Service**	**SIMATIC PDM S7**	**SIMATIC PDM PCS 7**		
		V9.2	**V9.2**	**V9.2**	**V9.2**	**V9.2**	**V9.2**	**Server V9.2**	**FF V9.2**
Count Relevant Licenses (cumulative)	• 10 TAGs • 100 TAGs • 1000 TAGs	Not expandable (can only be used for a single device and cannot be extended with other options)	○ [2]	○	○ [2]	○	○	○	○
SIMATIC PDM Basic			●	●	●	●	●	●	●
SIMATIC PDM Extended			○	●	○	●	●	●	●
SIMATIC PDM Integration in STEP 7 / PCS 7			○	●	○	●	●	●	●
SIMATIC PDM Routing[2]			○ [2]	●	○ [2]	○	●	●	●
SIMATIC PDM Server			○	●	○	○	○	●	○
SIMATIC PDM FOUNDATION Fieldbus			○	○	○	○	○	○	●
HCF HART Server			○	○	○	○	○	○	○
SIMATIC PDM Command Service[3]			○	-	○	-	-	-	-

Note

Devices subject to licensing

SIMATIC PDM only displays devices if a TAG license is installed for each device 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.

3.7.2 Options

Add-ons for SIMATIC PDM subject to licensing

Note

SIMATIC PDM Single Point

- SIMATIC PDM Single Point can only be used for a single device.
- SIMATIC PDM Single Point cannot be extended with other functional or TAG options.

You can purchase the following options for **SIMATIC PDM**:

- **SIMATIC PDM TAG**

  Note

  Note TAG licenses

  Maintenance projects use no TAG licenses; they only reserve TAG licenses. Multiprojects or other projects use TAG licenses.

  If you want to use more TAGs for each multiproject or project than those provided in the standard package, the TAG options of SIMATIC PDM enable you to expand the TAGs to the required number. By combining multiple license keys, you can reach the required number of devices for licensing (TAG addition). See section "Establishing connections to field devices (Page 22)".
  The "SIMATIC PDM Routing" option is not included in the SIMATIC PDM stand-alone product package. Licensing for use of the S7 DSGW (data record gateway) for gateways from the plant bus (Ethernet) to field buses (PROFIBUS) is performed via TAG licenses. All objects are licensed as follows (cumulative TAG licensing):

Link IE/PB	10 TAG
SIMATIC automation system	20 TAG
DSGW with 1 subnet	10 TAG
DSGW with >1 subnet	20 TAG
CFU	1 TAG
Link DP/PA (EFD)	1 TAG
Link DP/PA/Y	0 TAG
Coupler DP/PA (FDC	0 TAG
External RIO stations	1 TAG
External RIO signal modules	0 TAG
Internal RIO station and signal modules	0 TAG
Field device	1 TAG

- **SIMATIC PDM Extended**
  This option licenses and enables the use of the following additional functions:
  - Import and export of parameter sets and project structures
  - Printing dialog content in a PDF file
  - Import and export of parameter sets
  - Import and export of project structures
  - Printing logs
  - Printing parameter tables
  - Extended functionality of the LifeList
  - Change log
  - Calibration log
  - Configuration of time intervals for maintenance, servicing and calibration

- **SIMATIC PDM integration in STEP 7** (PCS 7)
  This option 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 to as **SIMATIC PDM integrated** in this documentation.

- **SIMATIC PDM Routing**
  This option licenses and enables the use of the following gateways:
  - Communication via an automation system which serves as a gateway
  - Communication between Ethernet and PROFIBUS
  - Communication between PROFINET and PROFIBUS

  This option is not required for the following applications:
  - For a PROFIBUS to PROFIBUS gateway
  - For a PROFIBUS to HART gateway
  - For a PROFINET to HART gateway
  - For the SIMATIC PDM stand-alone product package
- **SIMATIC PDM Server**
  This option licenses and enables the following applications:
  - Accessing functions of SIMATIC PDM using a browser
  - Access with a maintenance client to the configuration interface of SIMATIC PDM for the selected field device
  - Enables SIMATIC PDM start on each client of the PCS 7 maintenance station and access to functions of SIMATIC PDM using a browser.
- **SIMATIC PDM Client**
  This option licenses and enables access to the SIMATIC PDM Server via a browser on a separate PC station. The required data must be provided by the SIMATIC PDM Server.
- **SIMATIC PDM FOUNDATION Fieldbus**
  This option licenses and enables configuration and communication of field devices on the FOUNDATION Fieldbus in SIMATIC STEP 7 and SIMATIC PCS 7 projects.
- **HCF HART Server**
  This option licenses and enables the use of the HCF HART Server and thereby HART multiplexers with connected HART field devices and wireless HART field devices.
- **SIMATIC PDM Command Service**
  This option licenses and enables integration of SIMATIC PDM in additional automation systems. SIMATIC PDM projects and objects can be edited and operated through the associated interface. The use of this interface requires advanced programming skills. If you want to use these interfaces, contact your Siemens representative.

- **SIMATIC PDM Logon**
  This option licenses and enables the use of the user management for the SIMATIC PDM Server.
- **SIMATIC Logon**
  This option licenses and enables the use of SIMATIC Logon.

Note

The "SIMATIC Logon" option requires licenses for the following applications:

- SIMATIC PDM stand-alone
- SIMATIC PDM integrated in STEP 7
- SIMATIC PCS 7 (exception: no separate license is necessary within the associated SIMATIC PCS 7.)

3.7.3 Delivery contents

Scope of delivery

Information about the software packages that are delivered with SIMATIC PDM can be found in the *pdmbase-readme* file.

Device libraries

Information on the devices contained in the SIMATIC PDM device libraries can be found:

- On the Internet pages of the device manufacturers
  The updated versions of the device libraries and the HCF catalog are available in publications on the Internet.
- On the "SIMATIC PDM Device Library ..." installation medium in the **_manuals \PI_Library_Documentation folder >** in the "index.html" file

Liability

Note

Read the information in the section "Basis for using intelligent field devices (Page 20)".

Installation

4

4.1 Compatibility

PDM V9.2 SP2 is compatible with STEP7 V5.6 / STEP7 V5.7 and PCS 7 V9.1 SP2.

PCS 7 V8.0.2 is supported without the SIMATIC PDM FF option.

4.2 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 scenario, you only need to install certain applications.

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.

Note

Display of the dialog elements

Dialog elements of SIMATIC PDM are only displayed correctly when the display settings in Windows are set to 100%. Bigger or smaller scaling lead to display errors.

Calling the setup program

1. Use the installation medium.
2. Double-click on "Setup.exe" to start the setup.

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 installation medium.
- 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.

Note

If your computer is installed under Windows 7 or Windows Server 2008 R2, you must install, before you can start the Setup.exe of PDM, a certificate using the following steps:

- Open the directory ....\CD_1\Cert_Win7\Verisign on the PDM installation medium
- Run the "Verisign.cmd" file as administrator
- Restart your PC

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, "English" and "Next"
2. Welcome
   - "Next"
3. Product information
   - Read this if needed and "Next"
4. License agreement
   - Select the check box "I accept the conditions of the above license agreement as well as the conditions of the Open Source license agreement. I confirm that I have read and understood the security information".
   - "Next"
5. Setup type
   - Activate the "Install" check box and "Next".
6. User information
   - Enter the user information and click "Next".

7. Programs
   – The options installed on the PC for this selection are listed in the display window. Select the add-ons you want to use and for which you have licenses or will later acquire. "Next"

Add-ons	Required for:
SIMATIC PDM FOUNDATION Fieldbus	Configuring and/or monitoring FF devices
SIMATIC PDM Command Service	Integrating SIMATIC PDM in automation systems Note: Not required for SIMATIC PCS 7
SIMATIC PDM Server	Accessing functions of SIMATIC PDM via browsers or faceplates
SIMATIC PDM Logon	Managing users for SIMATIC PDM Server
SIMATIC Logon	Managing users for SIMATIC PDM and SIMATIC PDM Server
HCF HART Server	Using HCF HART Server and HART components

8. 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**

9. Ready to install the selection.
   "Install" - The installation is performed.
   Close the dialog box when the installation is complete.
10. 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 43)"
- Section "Integrating device descriptions (Page 54)"

4.3 Preparing SIMATIC PDM

Requirement

- SIMATIC PDM is installed.
  You can find information on this in the section "Installing SIMATIC PDM (Page 34)"
- Project settings have been made.
  You can find information on this in the section ""Options" menu (Page 271)".
- 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 22)"
- 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 "Integrating device descriptions (Page 54)".

Recommendation:

Hardware has been prepared (configuration, power supply, network connections).

Additional information

- For additional information on assigning a network, refer to the section "Setting the interface on the computer (Page 91)".
- For information on the particular issues relating to the distributed I/O, refer to the section "Modular PROFIBUS device (remote I/O) (Page 115)".

4.4 Setting the language

Changing the language

1. In SIMATIC Manager, select the menu command **Options > Settings...**
   .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 in which SIMATIC Manager is installed.
If you select a language for which there is no matching SIMATIC PDM language version installed on the given computer, "English" is set automatically.

4.5 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

Re-installing

Re-installation over the top of an existing SIMATIC PDM version is possible.

Note

Device descriptions

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

The device descriptions included with SIMATIC PDM are available in the "Device Library".

You know the storage locations of additionally used device descriptions.

You can find information about integrating the device descriptions in the section "Integrating devices into SIMATIC PDM (Page 43)".

Removing

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

PDM Exportfile Converter

5

5.1 "PDM Exportfile Converter" dialog box

In the "PDM Exportfile Converter" dialog, you can convert export files from older PDM versions, enabling them to be imported into PDM again.

The export files from PDM versions V6.x and V7.x cannot be imported directly into SIMATIC PDM as of V8.0.
To enable importing of existing export files, the "old" export files are converted.
A structure file is generated in this case and stored along with the associated parameter import files in the corresponding subdirectory generated by the converter. These files can then be imported.

Note

During export in V6.x, you must ensure that the set SIMATIC Manager language matches the set system language of the computer. For example, when the character format is en-EN and the language is English.

Source-File

Navigate to the desired directory in the file system containing the export files to be converted.

After the dialog is closed with OK and an export file is correctly selected, the structure it contains is displayed in the converter.

Destination-Dir

Navigate to the desired directory in the file system where the converted files are to be stored.

"Convert" button

Click "Convert". The selected source file is converted.

Integrating devices into SIMATIC PDM 6

6.1 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, FF library, and PI library from the "Device Library ...".

NOTICE
Important information about the device descriptions included with the SIMATIC PDM
The device descriptions of non-Siemens field devices were not 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.

NOTICE
Integrity of device descriptions
The import of incorrect or manipulated device descriptions may lead to an incorrect device behavior and entail a risk for the plant/system.
Ensure that device descriptions are only obtained and integrated from reliable sources.

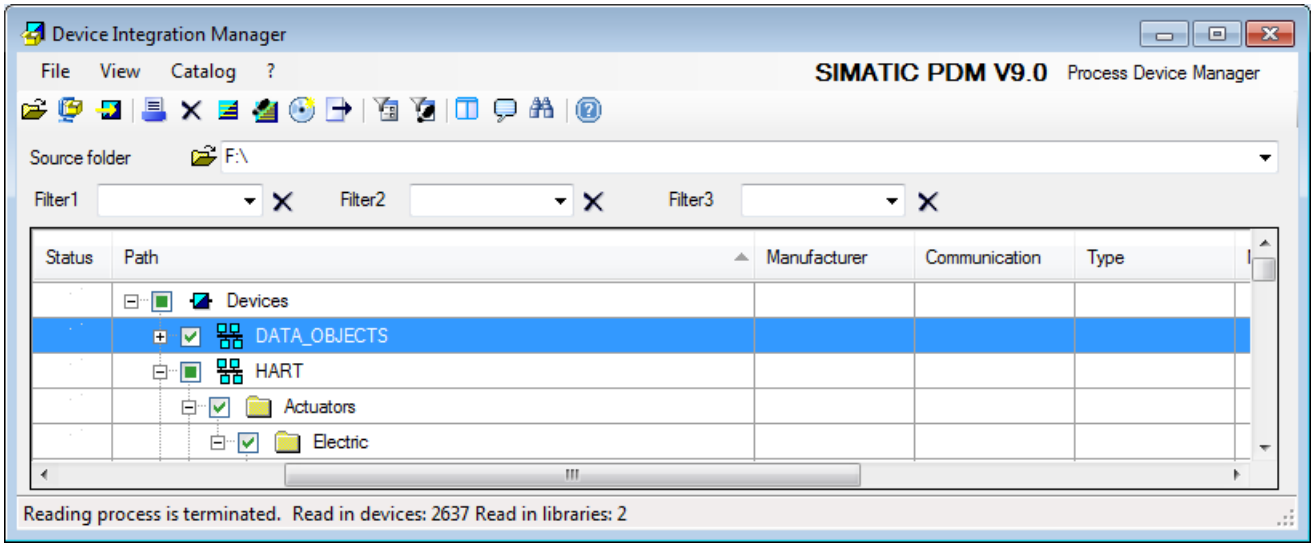
Starting the Device Integration Manager

1. In the Windows Start menu under the Siemens SIMATIC programs, select the **SIMATIC PDM > Device Integration Manager** menu command.
   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.

6.2 "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 has the following layout	
Title bar (Page 46)	The product name is displayed.
Menu bar (Page 46)	You access the functions of the Device Integration Manager via the menu bar.
Toolbar (Page 47)	The toolbar enables certain menu commands to be accessed quickly.
Source folder (Page 51)	The "Source folder" box shows the storage location in which device descriptions are or were searched for.
Applying a filter (Page 52)	You can apply filters to reduce the amount of information displayed in the device list.
Applying a project filter (Page 67) / Applying Filter File (Page 66)	Only those devices that are used in the selected project and for which an identical version has not yet been integrated are selected for integration.
Device list (Page 48)	The device list displays information on devices that have been read in or integrated.
Status bar (Page 51)	Contains information on processes currently being performed.

6.3 Views

6.3.1 Title bar

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

6.3.2 Menu bar

Structure

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

Menu	Submenu	Function
File	• Read device descriptions from source directory (Page 60)	Select the storage location of the device descriptions to be read in. Set the path to the device descriptions or navigate to the location.
	• Read device descriptions from compressed source (Page 60)	Select the storage location of the compressed device descriptions to be read in. Set the path and the file name for compressed device descriptions or navigate to the location.
	• List of integrated device descriptions (Page 61)	The device descriptions integrated in the PC are read in to the device list.
	• List of device descriptions used (Page 62)	The device descriptions used in the STEP 7 project are displayed.
	• Save device list (Page 62)	The displayed information of the current device list is saved. Specify the storage location and file name for the file in which the device list is to be saved.
	• Print device list (Page 62)	The device list is sent to the selected printer.
	• Deleting the device list (Page 63)	The displayed device list is emptied. Application example: Clearing the device list before reading in device descriptions again.
	• Exit (Page 63)	Closes the Device Integration Manager.
View	• Split device list window (Page 63)	The device list window is split or the split is removed.

Menu	Submenu	Function
Catalog	• Complete device information (Page 65)	If the software detects that relevant 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 65)	The device descriptions are integrated into SIMATIC PDM for those devices selected in the device list. Requirement: The check box for the required device is selected in the "Path" column of the device list.
	• Creating user-specific device DVD (Page 66)	Your own device library is created. Device libraries that were created in this way can be copied, compressed or burned to DVD. These libraries can be read in and integrated with the Device Integration Manager just like the SIMATIC PDM "Device Library ...".
	• Applying Filter File (Page 66)	Select a filter file (previously saved device list) according to which the currently displayed device list is to be filtered.
	• Applying a project filter (Page 67)	Select a project or multiproject to filter the currently displayed device list for components used in the project.
	• Remove Filter File/Project Filter (Page 67)	Filtering by means of a filter file or project filter is stopped.
	• Messages (Page 68)	The "Messages" dialog box opens.
	• Find (Page 68)	The "Find" dialog window opens.
?	• Help (Page 69)	Opens the help for SIMATIC PDM.
	• Info (Page 69)	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:

- Setting the language: Section **Options >** "Settings (Page 271)"
- Section **Options > SIMATIC PDM > Settings >** "Device Integration Manager" tab (Page 276)

6.3.3 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
	Read device descriptions from source directory (Page 60)	Select the storage location of the device descriptions to be read in. Set the path to the device descriptions or navigate to the location.
	Read device descriptions from compressed source (Page 60)	Select the storage location of the compressed device descriptions to be read in. Set the path and the file name for compressed device descriptions or navigate to the location.
	Integrate (Page 65)	The device descriptions are integrated into SIMATIC PDM for those devices selected in the device list.
	Print device list (Page 62)	The device list is sent to the selected printer.
	Deleting the device list (Page 63)	The displayed device list is emptied. Application example: Clearing the device list before reading in device descriptions again.
	List of integrated device descriptions (Page 61)	The device descriptions integrated in the PC are read in to the device list.
	List of device descriptions used (Page 62)	The device descriptions used in the STEP 7 project are displayed.
	Creating user-specific device DVD (Page 66)	Your own device library is created.
	Save device list (Page 62)	The displayed information of the current device list is saved. Specify the storage location and file name for the file in which you want the device list to be saved.
	Applying Filter File (Page 66)	Select a filter file (previously saved device list) according to which the currently displayed device list is to be filtered.
	Applying a project filter (Page 67)	Select a project or multiproject to filter the device list for components used in the project.
	Split device list window (Page 63)	The device list window is split or the split is removed once again.
	Messages (Page 68)	The "Messages" dialog box opens.
	Using the Find function (Page 68)	The displayed device list is searched. Open the "Find" dialog box. Enter a character string and specify the search options.
	Help (Page 69)	The SIMATIC PDM help opens.

6.3.4 Device list

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

Columns

Column	Description
Path	**Tree structure** - The devices with device description are displayed in a hierarchical structure (catalog path). **Flat structure** - The devices with device description are displayed without a hierarchical structure. The devices are displayed in a hierarchical structure when you click the "Path" column header for sorting. The devices are displayed in a flat structure when you click the header of any other column (except "Path"). • Select the check boxes for the devices whose device descriptions are to be integrated.
	 Communication
	 Folder for device classes (actuator/sensor etc.)
	 Manufacturer
	 Device type, Component, Device version, Variant
Device name	Device name
Manufacturer	Manufacturer
Communication	Communication type for the connection to the field device
Device class	Catalog position (object name)
New version	Version of the device description which was read in from a device description library
Integrated version	EDD source version
Integrated on	Installation date of the installed EDD
Description	Attribute from device file
Type ID	ID of the device type
GSD file	Names of the GSD files
New DD revision	Revision of the device description file of the imported device package
Integrated DD revision	Revision of the device description file of the integrated device package
New device revision	Device revision of the device with which the imported device package is compatible.
Integrated device revision	Device revision of the device with which the integrated device package is compatible.
Device library	Version number of the device library from which the device package was imported during integration. If the device package was supplied as a single package, this column is empty.
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 will find additional information on this topic in section "Device Integration Manager" tab (Page 276).	

Status icons of the device description

Table 6-1 Meaning of icons before the status of the device description integration

Icon	Meaning
	Not (yet) integrated
	Device info incomplete

Icon	Meaning
	An identical or newer device description is integrated.
	The device description is in the process of being integrated.
	The device description has been integrated successfully.
	The device description is used in the project but neither read in nor integrated.
	Error; Observe the error details in the message window.
	Warning; Observe the warning details in the message window.

Table 6-2 Meaning of icons after the device descriptions have been read in and before they have been integrated

Icon	Meaning
	The device description has been read in without any errors but has not yet been integrated.
	The device information is incomplete in the imported device description. The device description cannot be integrated correctly. You can find information on correcting this in the section "Completing a device description (Page 55)".
	An identical or newer version of the device description is integrated.
	The device description is in the process of being integrated.
	The device description has been integrated successfully.
	Errors occurred while reading in the device description. The device description cannot be integrated. For details regarding the error messages, see the message window.
	Warnings generated. The device description has been read in and can be integrated.

Table 6-3 Meaning of the icons after integration of the device description

Icon	Meaning
	The device description has not been integrated because the user did not select it for integration.
	The device description was not integrated because an identical or a newer version was already installed.
	The device description has been successfully integrated without errors.
	The device description has been successfully integrated without errors. Warnings or errors occurred during the semantics check.

Icon	Meaning
	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.
	The device description has been integrated. The warnings indicate potential inconsistencies.

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).

6.3.5 Status bar

The status bar is located at the bottom of the main window. It displays the number of read in or integrated device descriptions.

6.3.6 Source folder

The Source folder box is located underneath the toolbar. You use this box to select the path in which the device descriptions are located. The device list is created based on the device descriptions.

The source can be:

Icon	Meaning
	Folder
	Compressed file (*.zip)
	Device description file (*.xml)

The Source folder box gives you the option to display the history of the directories so far. Click the drop-down list icon on the right side of the box to display the last ten sources.

Changing the source folder

Procedure

1. Click the "Find folder" icon.
   The "Change source folder" dialog box opens.
2. Navigate to the required directory in the file system.
3. Click "OK".

Alternatively, you can enter the path in the text box.

All compressed files included in the selected source directory are searched for the device descriptions. Compressed files within a compressed file are also taken into consideration.

6.3.7 Applying a filter

The "Filter" box is located underneath the "Source folder" box. You can filter for up to three strings of your choice (filters 1, 2 and 3) simultaneously. When the filter is applied, all devices that include all specified strings in their device description are displayed. A distinction is not made between uppercase and lowercase letters.

Procedure

1. Click in the text box "Filter 1", "Filter 2" or "Filter 3".
2. Enter the required search term.
3. Confirm your entry with the "Enter" key.
   The device list is searched for the search terms and updated.

Each input box gives you the option to display the history of the search terms so far.

- Click the drop-down list icon to the right of the text box to display the history.
- To disable individual filters, click on the ✕ of the respective filter.

Note

The filter (text boxes, filter files, project filter) does not only affect the display. The selections of all devices excluded by the filter are removed and no longer set when the filter is disabled.

See also

Applying a project filter (Page 67)

Remove Filter File/Project Filter (Page 67)

Applying Filter File (Page 66)

6.3.8 Filter file/Project filter

The "Filter file/Project filter" box is located underneath the "Source folder" box. It is only displayed when you use a filter file or the project filter.

The devices that match the data of the filter file or are contained in the project file are displayed when the filter is applied.

Applying a filter

The procedure for applying a filter file or a project filter is described under Filter file (Page 66) or Project filter (Page 67).

See also

Remove Filter File/Project Filter (Page 67)

6.4 Working with the Device Integration Manager

6.4.1 Integrating device descriptions

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

Device descriptions of the "Device Library"

Make sure the device descriptions are always integrated in SIMATIC PDM from the "Device Library" 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 to integrate device descriptions for devices on FOUNDATION Fieldbus.
You can find information on this in section "Installing SIMATIC PDM (Page 34)"

Upgrading SIMATIC PDM

Note

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 PC.
2. Go to the Windows Start menu and select the menu command **SIMATIC PDM > Device Integration Manager** under the Siemens SIMATIC programs.
   You must accept the license agreement to be able to use the Device Integration Manager .
3. Select the **File > Read device descriptions from source directory...** menu command. **File > Read device descriptions from compressed source...**
4. Navigate to the folder with the device descriptions in the tree structure.

   Note

   "Device Library"

   The "Device Library" is supplied with SIMATIC PDM on the installation medium.

5. 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 48)".

6. Select the check boxes for the devices whose device descriptions are to be integrated. The check box is automatically selected for devices that have not been integrated or have been integrated with an older version. You can work with a split device list window (Page 63).
7. Select the **Catalog > Integration...** menu command.
   The device descriptions are transferred to the PC.

Note

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 "Completing a device description (Page 55)".

Additional information

- Section "Delivery contents (Page 31)"
- Section "Messages (Page 58)"
- Section "Checking the device integration (Page 92)"
- Section "Replacing devices (Page 125)"

6.4.2 Completing 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 **Complete device information...** command in the shortcut menu.
2. Complete the device description.

3. 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.

4. 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 48)".

6.4.3 Creating your own device library using the project filter

Introduction

You use the following procedure to create your own device library using the project filter.

Project filter

Information on the project filter and its application is available in the section "Applying a project filter (Page 67)".

Procedure

1. Read in the device descriptions of a standard library.
2. Apply a project filter.
3. Select the **Catalog > Creating user-specific device DVD... menu command.**
4. Enter the destination path in the "Create own device library... " dialog box.
5. Enter the device library name or the version identification of the device library.

Note

Devices without help files

If you are using a device without help files, you can integrate the help files at a later time. To do this, answer the "Missing Help Files" dialog box with "Yes".

Additional information

- Section "Integrating device descriptions (Page 54)"
- Section "Basis for using intelligent field devices (Page 20)"

6.4.4 Creating your own device library from a collection of device descriptions

You use the following procedure to create your own device library from a collection of device descriptions.

Collection of device descriptions

You can find information about the availability of device descriptions and their application in the section "Basis for using intelligent field devices (Page 20)".

Procedure

1. Read in the device descriptions of a standard library.
2. Select the check box for the device descriptions that you need in your own device library.
3. Select the **Catalog > Creating user-specific device DVD... menu command.**
4. Enter the destination path in the "Create own device library... " dialog box.
5. Enter the device library name or the version identification of the device library.

Note

Devices without help files

If you are using a device without help files, you can integrate the help files at a later time. To do this, answer the "Missing Help Files" dialog box with "Yes".

Additional information

Section "Integrating device descriptions (Page 54)"

6.4.5 Removing device descriptions

Shortcut menu

If you select objects in the list of integrated device descriptions, you can use the shortcut menu to remove the device description:

Removing integrated device descriptions

Delete the selected objects from the list of integrated device descriptions via this menu command. The selected objects are also deleted from the catalog.

6.4.6 Update / upgrade of device descriptions (EDD update)

Procedure

1. Check the version of the integrated device descriptions.
   You can find information on this in the section "Device list (Page 48)".
2. Read in the new device descriptions and compare the new version with the integrated version.
   You can find information on this in the section "Read device descriptions from source directory (Page 60)".
3. Select the required device descriptions and integrate the device descriptions. The check box is automatically selected for devices that have not been integrated or have been integrated with an older version.
   Information on this is available in the section "Integrating device descriptions (Page 54)".

See also

Download to device (Page 245)

6.4.7 Messages

Message log

If errors occur during the actions or in the application of the Device Integration Manager, they are shown in the message log. The message log opens automatically when a warning or an error has occurred, but it can also be opened manually from any node in the device list. In this case, all messages of the nodes under this in the hierarchical order are displayed.

Additional information

Section "Message log (Page 161)"

6.4.8 Checking syntax and semantics.

You have two ways to check the syntax and semantics:

1. During the integration of the packages in the "Device Integration Manager".
2. After integration of the packages in the "Device Integration Manager" in the device list using the **Check Syntax and Semantics** shortcut menu.

Starting the check of syntax and semantics via the shortcut menu

1. Start the Device Integration Manager.
2. Select the menu command **File > Menu > List of integrated device descriptions**.

3. Select the desired device description or device descriptions.
4. In the shortcut menu, select the command **Check Syntax and Semantics**.
   The syntax and semantics are checked.
   Warnings and errors are displayed in the message log.

Possible results of the check

After the check, the results are indicated in the "Status" shown column by a symbol (Page 48).

6.5 Menus and dialog boxes

6.5.1 File

6.5.1.1 Read device descriptions from source directory

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

Requirement

The storage paths of the device description files can be accessed.

Procedure

1. Select the menu command **File > Read device description files from source directory ...**.
   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.

Note

If the compressed file is password-protected, a dialog appears for entering a password.

Shortcut menu

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

- Messages (Page 58)
  Open the message log via this menu command.
- Complete device information (Page 65)
  Open the "Complete device information..." dialog via this menu command.

6.5.1.2 Read device descriptions from compressed source

Introduction

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

Requirement

The storage paths of the device description files can be accessed.

Procedure

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

Note

If the compressed file is password-protected, a dialog appears for entering a password.

Shortcut menu

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

- Messages (Page 58)
  You use this menu command to open the message log.
- Complete device information (Page 65)
  You use this menu command to open the "Complete device information..." dialog.

6.5.1.3 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 object-dependent shortcut menu commands:

- Messages (Page 68)
  You use this menu command to open the message log.
- Remove integrated device description(s) (Page 57)
  You use this menu command to delete selected objects from the list of integrated device descriptions.

See also

Complete device information (Page 65)

6.5.1.4 List of device descriptions used

Displaying the device list

Display of the devices used in the project.

The status column (Page 48) indicates whether or not the corresponding device description is integrated on the computer.

If you select a STEP 7 multiproject, all projects are always displayed, even when only a subproject is selected in the dialog box.

Shortcut menu

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

- Messages (Page 68)
  You use this menu command to open the message log.
- Remove integrated device description(s) (Page 57)
  You use this menu command to delete selected objects from the list of integrated device descriptions.

See also

Complete device information (Page 65)

6.5.1.5 Save device list

Saving the device list

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

6.5.1.6 Print device list

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

Setting the printer options

Note

- 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".

6.5.1.7 Deleting the device list

Clearing the displayed device list.

Example of application

Clearing the device list before reading in device descriptions again.

6.5.1.8 Exit

Exits the "Device Integration Manager".

6.5.2 View

6.5.2.1 Split device list window

The device list window is split or the split is removed.

When you select the menu command, the device list window is cut in half vertically. The right half shows an additional device list window with the same structure. This window includes all devices selected in the left device list window (check boxes are selected).

Note

The line selected with the mouse is displayed with a blue background in the active window. In the inactive window, the line is displayed with a gray background.

The check boxes in the left device list window are visible but cannot be operated.

You can move the dividing line between the two device list windows with the mouse.

The buttons for adding or removing selected individual devices or sub-trees are located between the two windows.

The selection of devices in the device list window is used for
- Integrating and
- Creating your own device library.

With a device list window that is not split, a selection can be made by setting the check boxes in the line of the device.

Mouse operation

By selecting a line in the left device list window and clicking the > button, you add individual devices or sub-trees to the right device list window.

By selecting a line in the right device list window and clicking the < button, you remove the individual devices or sub-trees added previously from the right device list window.

Keyboard operation

Use the "SHIFT + >" and "SHIFT + <" shortcuts to add or remove the selected devices to and from the right window.

Rules for working with split device list windows

When a filter is used, it acts on both device list windows.

Sorting can take place independently in each window.

Searches are only conducted in the active window with the selected line having a blue background.

An export only includes the contents of the left window (with selection information).

Only one device list window is displayed after the Device Integration Manager is restarted.

Note

You cannot split the device list window when the list of integrated or used devices is displayed.

6.5.3 Catalog

6.5.3.1 Complete 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 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., SENSOR - FLOW - ULTRASONIC)
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.

6.5.3.2 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 description of the PDM setting in the section ""Device Integration Manager" tab (Page 276)".

Remove integrated device description(s)

Section "List of integrated device descriptions (Page 61)"

6.5.3.3 User-specific device DVD

Creating user-specific device DVD

You can use the **Catalog > Creating user-specific device DVD...** menu command to create your own device library. You can copy created device libraries, save them as compressed archives or burn them on DVD and read in and integrate them with the Device Integration Manager just like the SIMATIC PDM "Device Library ...".

Additional information

Information on creating a device library from a collection of device descriptions is available here (Page 57).

Information on creating a device library using a project filter is available here (Page 56).

"Creating user-specific device DVD" dialog

Procedure

1. Select the **Catalog > Creating user-specific device DVD...** menu command.
   The "Create own device library ..." dialog box opens.
2. Enter the destination path, the name and a version identification of the device library.
3. Click "OK".

6.5.3.4 Filter file

Applying Filter File

You can use the **Catalog > Applying Filter File...** menu command to apply predefined filter files (device lists in XML format saved in the Device Integration Manager beforehand) to the device library.

The "Filter file" box is displayed underneath the "Source folder" box if a filter file is loaded.

"Apply Filter File..." dialog box

Procedure

1. Select the **Catalog > Applying Filter File...** menu command.
   The "Applying Filter File..." dialog box opens.
2. Select a file with an exported device list.
3. Click "OK".
   The currently displayed device list is filtered as follows:
   - Only devices that are read in and are included in the filter file are displayed.
   - Only devices that are selected in the filter file can be selected for integration.

Remove Filter File/Project Filter

The **Catalog > Remove Filter File/Project Filter** menu command is used to stop the application of the filter file or a project filter. The complete device list is displayed once again when you revoke the filter.

6.5.3.5 Project filter

Applying a project filter

You can use the **Catalog > Apply Project Filter...** menu command to select a STEP 7 project or STEP 7 multiproject to filter the device list for the components used in the project.

The "Project filter" box is displayed underneath the "Source folder" box if a project is loaded.

By combining the "Create own device library" and "Apply Project Filter" functions, you can create a device DVD that is perfectly adapted to your project.

If you select a STEP 7 multiproject, all projects are always selected, even when only a subproject is selected in the dialog box.

Note

Object status

Make sure that the status of each device contained in the project file is also integrated in the device library before you apply the project filter. You can determine this by the status icon in the "Icon" column of the device list. You can find a list of the icons under Device list (Page 48).

Additional information

Information on creating a device library using a project filter is available here (Page 56).

"Apply project filter..." dialog box

Requirement

A device list has been read in.

Applying a project filter

Procedure

1. Click the "Apply Project Filter..." icon in the menu bar.
   The "Open Project" dialog box opens.
2. Select the required project in the "User project" tab.
   If you want to open a multiproject, select the "Multiproject" tab.

3. If the required project file is located on an external source, click the "Browse" button and navigate to the required path.
4. Confirm your entry by pressing "Enter".
   The device list is searched and updated.

To revoke the filter, click the × button.

Remove Filter File/Project Filter

The **Catalog > Remove Filter File/Project Filter** menu command is used to stop the application of the filter file or a project filter. The complete device list is displayed once again when you revoke the filter.

6.5.3.6 Messages

Opens the "Messages" dialog box.

Additional information

Section "Message log (Page 161)"

6.5.3.7 Find

Using the Find function

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

"Find" dialog box

Procedure

1. Select the menu command **Catalog > Find**.
   The "Find" dialog box opens.
2. Enter a string and define search options.
3. Click "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**
  - **Match case**
    The writing style of the string entered for an object in the device list is observed.
  - **Match entire cell contents**
    The entire string must match for an object in the device list.
  - **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.

6.5.4 ? (Help)

6.5.4.1 Help

This menu command displays the Help on SIMATIC PDM.

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

6.5.4.2 Info

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

Views

7

7.1 Introduction

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

- Process Device Plant View
  The process device plant view provides an overview of all configured devices in all configured networks.
- Process Device Network View
  The plant topology is reproduced in the process device 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. You will find information about this in the *pdmbase-readme* file.

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 89)"

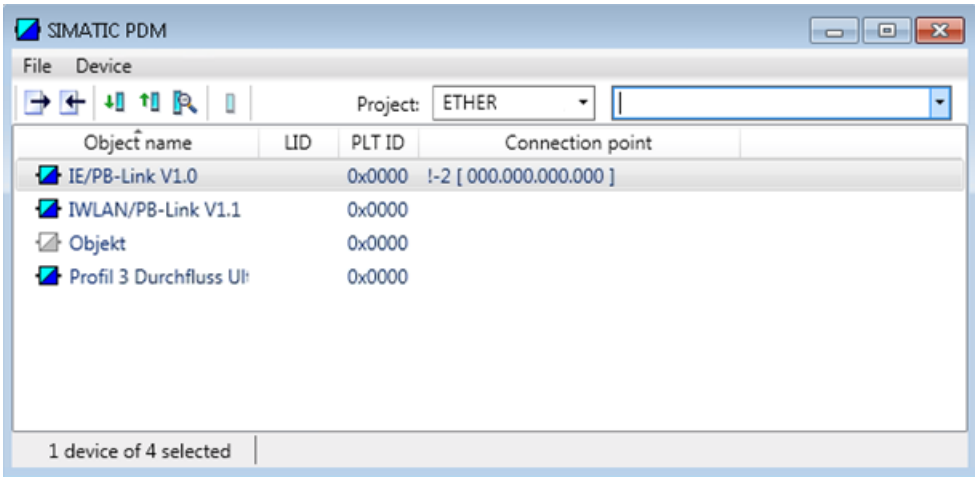
7.2 Views in SIMATIC Manager

7.2.1 Process devices plant view

7.2.1.1 Opening the 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.



Opening the process device plant view

1. Select the **View > Process device plant view** menu command in SIMATIC Manager.
   The process device plant view opens. The table shows all devices which are subordinate to the current project.
   If a project is part of a multiproject, the plant view of the multiproject opens.

7.2.1.2 Messages

Opens the "Messages" dialog box.

Additional information

Section "Message log (Page 161)"

7.2.1.3 Adapting the process device plant view

Display devices only

To hide all signal modules, interface modules and link modules, select **View > Display devices only** in the process device plant view.
Only the AFDiSD modules are displayed.
The display is reset when the process device plant view is called again.

Display devices with same name

To only display devices with names that appear multiple times, select **View > Display devices with same name** in the process device plant view.
Devices with names that only appear once are hidden.
The display is reset when the process device plant view is called again.

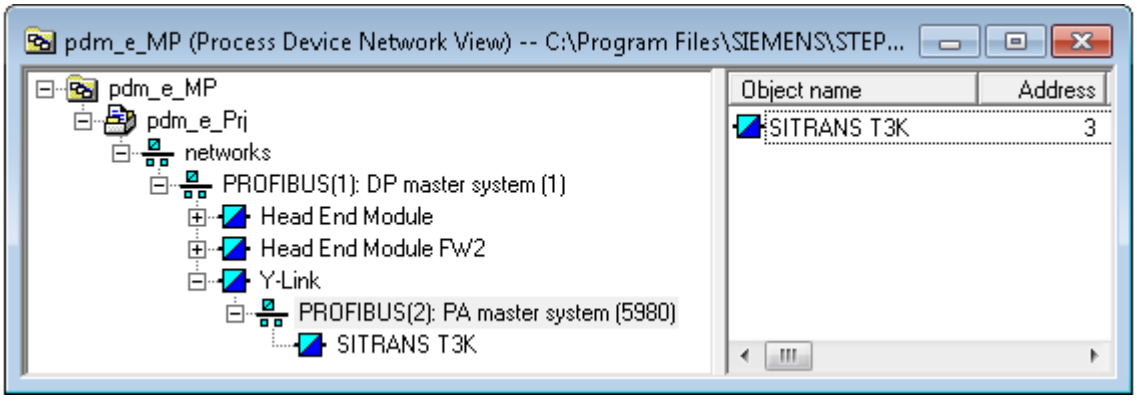
7.2.1.4 Operation View

To display all operations, select **View > Operation View** in the process device plant view.
All active, completed or processes and messages are subsequently displayed in this area.

7.2.2 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 devices network view, for example, for end-to-end connections between a PC and a device in the factory.



Opening the process device network view

1. Select the **View > Process device network view** menu command in SIMATIC Manager.
   The process device network view opens.

See also

"Settings" for the SIMATIC project (Page 89)

7.2.3 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 devices network view
- Process devices plant view

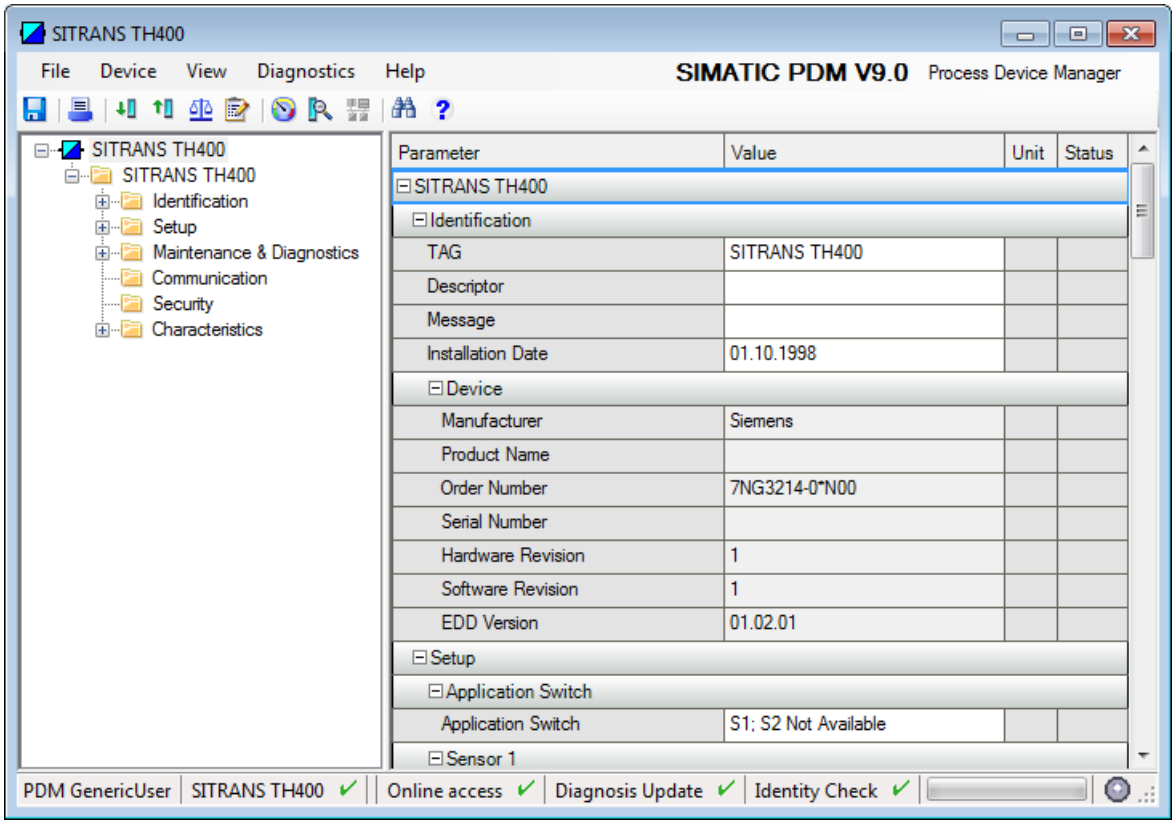
Changes cannot be incorporated into the process devices view if the higher-level objects are linked with HW Config to an existing S7 station.

7.3 Views in SIMATIC PDM

7.3.1 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 76): The title bar shows the project name or the name of the object which was selected before SIMATIC PDM was opened.	
Menu bar (Page 76): The menu bar can be used to call SIMATIC PDM functions and manufacturer-specific device functions.	
Toolbar (Page 77): The toolbar provides quick access to a few menu commands.	
Structure view (Page 77): The objects displayed depend on the object which was selected before SIMATIC PDM was started.	Parameter table (Page 78): The parameters for the object selected in the structure view are displayed in a table.
Status bar (Page 82): Contains information on the current processes.	

7.3.2 Title bar

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

7.3.3 Menu bar

Structure

Below is an overview of the SIMATIC PDM menus.

Menu	Submenu in parameter assignment mode
File	• Save (Page 187)
	• Exporting (Page 244)
	• Importing (Page 245)
	• Print (Page 195)
	• Exit (Page 196)
Device	• Download to device (Page 198)
	• Upload to PG/PC (Page 200)
	• Assign address and TAG (Page 204)
	• Value comparison (Page 205)
	• Object properties (Page 207)
	• Calibration log (Page 212)
	• Change log (Page 220)
View	• Process variables (Page 228)
	• Start LifeList (Page 149)
	• Trends (Page 229) (depends on device)
Diagnostics	• Update diagnostics (Page 232)
Help	• Contents (Page 235)
	• Help for device parameters (Page 235)
	• Info (Page 235)
	• Find (Page 235)
	• Document Manager (Page 235)
	• Device manual (depends on device)

7.3.4 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 187)
	Print (Page 195)
	Download to device (Page 245)
	Upload to PG/PC (Page 246)
	Value comparison (Page 205)
	Change log (Page 220)
	Device not checked (gray)/Device checked (Page 224) (green)
	Process variables / Measured value display (depends on device) (Page 228)
	Update diagnostics (Page 232)
	Start LifeList (Page 149)
	Find (Page 235)
	Contents (Page 235)

7.3.5 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 83)".
- 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 84)".

Icons

You can 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.
	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.

7.3.6 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 79)
- Value (Page 79)
- Unit (Page 80)
- Status (Page 80)

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 83)"

7.3.6.1 "Parameter" column of the parameter table

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

7.3.6.2 "Value" column of the parameter table

This column displays the value of the parameter whose name is in the "Name" (Page 79) 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 when 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. *) **)
Distributing parameters	Starts the quantity operation (distributing parameters)
*) Click the value to transfer it to the parameter table.	
**) There can be several minimum, maximum and default values.	

Additional information

- Section "Distributing parameters (Page 81)"

7.3.6.3 "Unit" column of the parameter table

The "Unit" column displays the engineering unit of the numerical value present in the "Value" (Page 79) column.

7.3.6.4 "Status" column of the parameter table

The "Status" column displays the status of the parameter whose name is in the "Name" (Page 79) column.

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

Icon	Meaning	Action that can trigger the status
- empty -	Value (Page 79) corresponds to the offline data storage system.	Save
	Initialization running or status "OK". *Value was never changed.*	Open new PDM object
	The parameter has been changed by means of operator input, import, or internal methods. *Value was changed by user.*	• Edit • Dialogs

Icon	Meaning	Action that can trigger the status
	The parameter could not be converted. *Value could not be converted following a change in the unit.*	Edit
	A parameter's value is defective. *An illegal value was detected the validity check (e.g., value too high or too low)*	Validity check of value
	The parameter has been successfully loaded. There is no difference between the loaded and the configured parameter.	• Download to device • Upload to PG/PC
	The parameter cannot be loaded, as a communication error is present. • *Error message when downloading to the device* • *Error message when uploading to PG/PC*	• Download to device • Upload to PG/PC

7.3.6.5 Distributing parameters

Requirement

The parameter view is open.

Distributing parameters

To distribute parameters, follow these steps:

1. Click a parameter in the parameter table.
2. Right-click to open the shortcut menu.
3. Select "Distribute parameters".
   The "Distribute parameters" dialog opens. All relevant devices are displayed in a list.
4. Select one or more devices in the list.
   To select individual devices, select the check box in front of the device.
   To select all devices, select the top check box in the header of the list.
5. Click on "Start".
   To cancel the action, click on "Cancel".
   To stop the action, click on "Close".

The parameter is transferred for the selected devices.

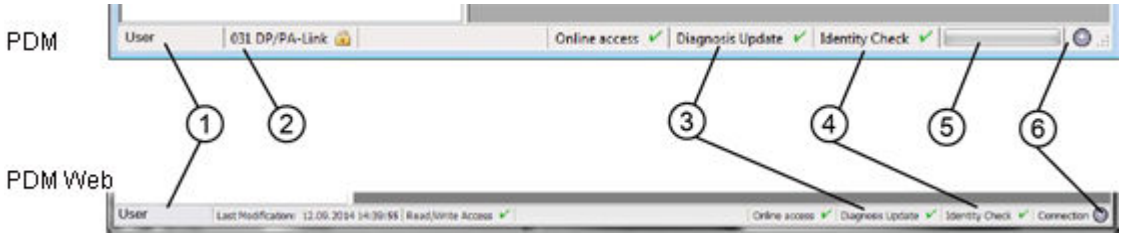
Message log

When the parameters have been distributed, a dialog box and a message log appear. The following messages and statuses are shown in a table:

Symbol	Class	Status text	Message
	Error	Action finished. Messages and errors occurred.	<Action identifier>: Action failed. Object is locked.
	Error	Action finished. Messages and errors occurred.	<Action identifier>: Action failed. <Error text according to error code>
	Error	Action finished. Messages and errors occurred.	<Action identifier>: Variable 'X' could not be set because it is outside the valid range.
	Information	Action finished. Messages occurred.	<Action identifier>: Variable 'X' could not be set because it has different configurations.
	Warning	Action finished. Messages and warnings occurred.	<Action identifier>: Variable 'X' could not be set to 'Y'. The value was automatically changed to 'Z'.
	Information	Action finished. Messages occurred.	<Action identifier>: Variable 'X' was set to 'Y'.

7.3.7 Status bar

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



Display

The following information is provided in the status bar:

1. User that is currently using SIMATIC PDM
2. PDM object on which information is currently shown in the parameter list (the object is locked for editing in the current view or another user is currently making changes to the object)
3. Diagnostics activated / deactivated
4. Identity check activated / deactivated
5. Processing status
6. Connection status for the object currently selected in the tree structure

7.3.8 Display

7.3.8.1 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 that identifies the user who opened the object and the PC from which 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.

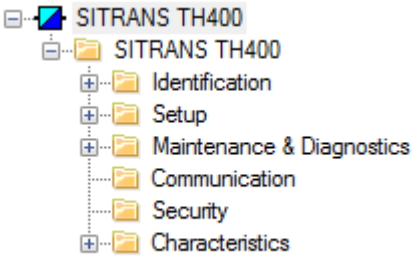
Setting options for SIMATIC PDM

You can find information on this in the section "Settings for SIMATIC PDM (Page 273)".

7.3.8.2 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

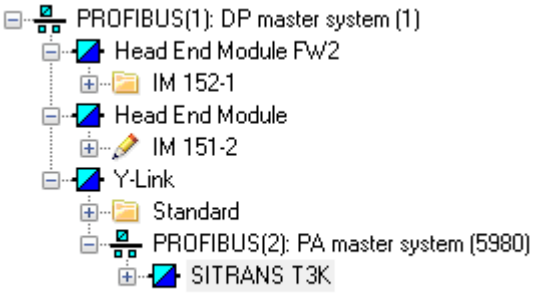
The main window is structured as follows:	
	**Parameter table** (on the right in the main window)
Status bar	

Additional information

- Section "Main Window "SIMATIC PDM" (Page 75)"

7.3.8.3 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 "Main Window "SIMATIC PDM" (Page 75)"

7.3.9 Keyboard operation

Key shortcuts

The tables below list the key shortcuts.

Selecting menus via keys

Key shortcut	Function
<CTRL + S>	Save (File menu) (Page 187)
<CTRL + P>	Print... (File menu) (Page 195)
<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, from left to right and from top to bottom
Arrow keys	Selected in the drop-down list
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

8

8.1 Introduction

Before you can work with SIMATIC PDM, you must create a project containing at least one PDM object in the SIMATIC Manager. Below the term "PDM object" refers to those objects that can be configured, have parameters assigned, or diagnosed with SIMATIC PDM. PDM objects are:

- 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 96)".

Requirements for working with SIMATIC PDM

- SIMATIC PDM is installed.
- The necessary license keys are available.
- The device descriptions have been integrated.
- There must be a connection to the corresponding network for online functions. You can find information about this in the section "Establishing connections to field devices (Page 22)".

Note

Access to the hardware configuration

Only one user at a time may access HW Config within a project. It does not matter whether one and the same or several S7 stations are being configured (see also the readme notes regarding use in PCS 7).

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 is 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
- PROFINET IO
- Ethernet
- HART modem
- 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.

8.2 Project editing

8.2.1 "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

Make the project settings In SIMATIC Manager using the following menu command: **Options > Settings...**

Settings	Tab	Meaning
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 of 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 > Communication network**
  - **Process device network view > Networks > Communication 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 (Location identifier denotes the installation position of a device)	-	**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
Installation date	-	x	-	-	x
Hardware version	-	x	-	-	x
Software version	-	x	-	-	x
Article 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

*Process control ID generated internally by PDM for identification of an object for connections to the Asset Management System (PCS 7 Maintenance Station and PDM Maintenance Station).

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

	Process device plant view (multiproject)	Process device network view (multiproject)
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 273)

Menus and dialog boxes for SIMATIC PDM in the SIMATIC Manager (Page 239)

8.2.2 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
- COM 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.

8.2.3 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, are 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*

8.2.4 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 devices plant view in SIMATIC Manager.
2. Open the "Devices" folder in the tree.
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 **View > Details** menu command.
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 247)"
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 "Integrating device descriptions (Page 54)"

Additional information

- Section "Overview of Device Icons (Page 144)"
- Section "Replacing devices (Page 125)"
- Section "Completing a device description (Page 55)"
- Section "Cleaning the project (reorganization) (Page 94)"

8.2.5 Print

You can print out the parameter list for a device.

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 root folder of a device.
  You can find information on the structure view in the section "Stand-alone device view (Page 83)".

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".

8.2.6 Cleaning the project (reorganization)

PDM objects can be contained in copied SIMATIC projects. If SIMATIC PDM will no longer be 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

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

8.2.7 Saving the configuration

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

Save the SIMATIC project to save the changes. Stop SIMATIC PDM before you save an entire SIMATIC project.

Procedure

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

Additional information

- STEP 7 Online Help
- PCS 7 Online Help

8.3 Device management

8.3.1 Inserting devices

8.3.1.1 Inserting 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
- PROFINET devices
- HART modem devices
- HART devices downstream of a remote I/O

Configure FOUNDATION Fieldbus devices in HW Config.

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 4 devices (demo mode).

Inserting a network, a header 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 98) ".

Procedure

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 97)"
   - "Object name" input box
   - "<Address>" input box (e.g., PROFIBUS address or PROFINET IP 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 98)".
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.
   You can find additional information on this in the section "Setting the bus address in HW Config (Page 103)".

Additional information

Section "Device selection (Reassign) (Page 247)".

8.3.1.2 "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 or PROFINET IP address)

  Note

  This setting cannot be changed when HART devices are added.

  – 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 HART devices are added.

  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 equal to 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 in 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.

8.3.1.3 "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 – PROFINET network – MODBUS – HART modem network – HART server – FOUNDATION Fieldbus network	Header module • Selection: – Remote I/O – PROFIBUS Link – PROFIBUS DP device – PROFIBUS PA device – HART 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, the tree structure includes a preselection with paths designed for the device. Select one of these paths.

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
  If device identification is not unique, select the required device in the result list and click the "Device identification" button again.
- For HART devices:
  Select the "HART" folder and then press the "Device identification" button

Additional information

- Section "Integrating devices into SIMATIC PDM (Page 43)"

8.3.1.4 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)
- Inserting a remote I/O system (PROFINET)

Requirement

PROFIBUS DP master system or PROFINET IO 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 98)".
  - 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 98)".

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. Drag-and-drop the PA devices to this PA master system.
   For certain objects it is necessary to select the device. You can find information on this in the section ""Insert Object - Assign Device Type" dialog box (Page 98)".

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

Integration is described based on the Pepperl+Fuchs example.

1. You can 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.

Inserting a remote I/O system (PROFINET)

The integration is described using ET 200M as an example.

1. Place the head-end station "IM153-4" you have selected from the hardware catalog under "PROFINET IO > I/O > ET200M" at the IO system.
2. The slots of the head-end station are displayed in the detail view in the table below the graphic. You can insert the required analog and digital modules in slot 4 and higher.

8.3.1.5 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 in which 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**.

8.3.1.6 Integrating a HART device in a HART modem network

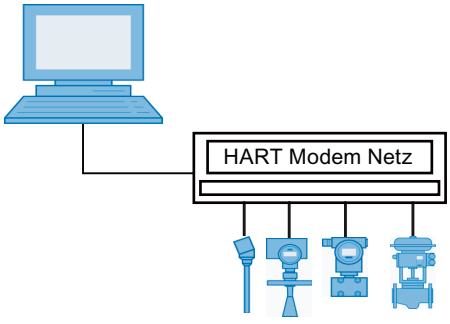


Figure 8-1 HART modem

The following describes how to integrate a HART device in a HART modem network.

Requirements

- A project has been created.
- The device description files (EDD) for planned or already installed field devices are available in SIMATIC PDM.
- An access point of the computer is set to the COM port to which the HART modem network is connected.

Integrating a HART device in a HART modem network

1. Open the project in the process device network view.
2. Right-click the "Networks" object in the tree structure. In the shortcut menu that opens, select the menu command **Insert New Object > Communication network**.
   The "Insert Object(s) - <...>" dialog box opens.
3. Click the "Assign Device Type" button.
   The "Insert Object(s) - Assign Device Type" dialog box opens. You can find additional information in the section "Insert Object - Assign Device Type" dialog box (Page 98).
4. To set the network properties, select the inserted HART modem network in the right window and right-click. Select the entry **Object Properties** in the displayed shortcut menu.
5. Enter the device-specific information in the "Communication" tab of the Properties dialog for the HART modem network.
   Set the master type (primary or secondary, usually secondary):
   Here, you can select the "Prefer 'Long address'" check box.
6. To check if the correct network and the correct port are assigned to the COM interface, double-click the "PC" object in the right window. Select the "COM interface" object in HW Config, and select the **Object Properties** menu command in the shortcut menu.

   Note

   The COM port is almost always "1" for notebooks. Since most PCs have two COM ports, you must specify the port to which the HART modem is connected in this tab. Check whether the settings for the FIFO buffer of the COM port are suitable, or immediately use a USB HART modem.

7. To insert the HART device, select the "**HART modem network**" object in the right window and right-click. In the displayed shortcut menu, select the **Insert New Object > Object** command.
   In the displayed dialog box, enter the name of the HART device.
8. To set the device address, select the inserted HART device in the right window and right-click. Select the entry **Object Properties** in the displayed shortcut menu.
9. Enter the device-specific information (long address) in the "Communication" tab of the Properties dialog for the HART device.

   Note

   Address with HART

   The information must correspond to the connected device.

   - The short address must be entered for HART devices. This address must correspond to the connected HART device. The short address is always "0", unless the device is in the multi-drop function.
   - For a HART interface, enter the long address. This address contains the following device-specific information:
     - Manufacturer
     - Device type
     - Device name

10. To change the device address, select the inserted HART device in the right window and then select the **Object properties** menu command in the shortcut menu. Select the "Communication" tab in the displayed dialog and enter the new short address.

Note

The address must correspond to the connected device. The short address for HART devices is always "0" unless the device is in the multi-drop function.

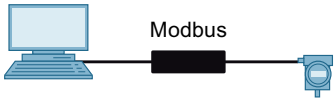
11. Start SIMATIC PDM by double-clicking the newly inserted HART device in the right window. Select the relevant device in the tree view (only required the first time the device is called), and assign parameters for the device.

Note

Multiple PCs in one project

If there are several PCs in your project, you have to define one of them as the current one. To do this, select the desired "**PC**" object in the left window and then select the menu command **Options > Define Current PC**.

8.3.1.7 Integrating a MODBUS device in a MODBUS network



The following paragraph describes how you integrate a MODBUS device in a MODBUS network.

Requirements

- A project has been created.
- The device description files (EDD) for planned or already installed field devices are available in SIMATIC PDM.

Integrating a MODBUS device in a MODBUS network

1. Open the project in the process device network view.
2. Right-click the "Networks" object in the tree structure. In the shortcut menu that opens, select the menu command **Insert New Object > Communication network**.
   The "Insert Object(s) - <...>" dialog box opens.
3. Click the "Assign Device Type" button.
   The "Insert Object(s) - Assign Device Type" dialog box opens. You can find additional information in the section "Insert Object - Assign Device Type" dialog box (Page 98).
4. To set the network properties, select the inserted MODBUS network in the right window and right-click. Select the entry **Object Properties** in the displayed shortcut menu.

5. Enter the device-specific information in the "Communication" tab of the Properties dialog for the MODBUS network.

MODBUS communication type: Serial or IrDA (infrared)	
Serial	The interface must be set accordingly on the PC station.
IrDA	No additional setting required. Once the device is within range, it is available for MODBUS communication. Only one infrared device can be coupled to MODBUS at a given time. Several devices can be coupled under Windows.
Response time	General timeout within which the device is allowed to report. If the timeout is too long, the communication is slowed. If it is too short, some devices may not be found.

6. To check if the correct network and the correct port are assigned to the COM interface, double-click the "PC" object in the right window. Select the "COM interface" object in HW Config, and select the **Object Properties** menu command in the shortcut menu.

Note

The COM port is almost always "1" for notebooks. Since most PCs have two COM ports, you have to specify which port the device is connected to in this tab.

7. To insert the MODBUS device, select the "**MODBUS network**" object in the right window and right-click. In the displayed shortcut menu, select the **Insert New Object > Object** command.
   In the displayed dialog box, enter the name of the MODBUS device.
8. To set the device address, select the inserted MODBUS device in the right window and right-click. Select the entry **Object Properties** in the displayed shortcut menu.
9. Enter the device-specific information (MODBUS address 0-247) in the "Communication" tab of the Properties dialog for the MODBUS device.
10. To change the device address, select the inserted MODBUS device in the right window and then select the **Object Properties** menu command in the shortcut menu. Select the "Communication" tab in the displayed dialog and enter the new short address.
11. Start SIMATIC PDM by double-clicking the newly inserted MODBUS device in the right window. Select the relevant device in the tree view (only required the first time the device is called), and assign parameters for the device.

Note

Multiple PCs in one project

If there are several PCs in your project, you have to define one of them as the current one. To do this, select the desired "**PC**" object in the left window and then select the menu command **Options > Define Current PC**.

8.3.1.8 Integrating an S7 DSGW gateway

The procedure for integrating an S7 DSGW gateway is described below.

Requirements

- A project has been created.
- The device description files (EDD) for planned or already installed field devices are available in SIMATIC PDM.

Integrating an S7 DSGW network component

1. Open the project in the process device network view.
2. Right-click the "Networks" object in the tree topology. In the shortcut menu that opens, select the menu command **Insert New Object > Communication network**.
   The "Insert Object(s) - <...>" dialog box opens.
3. Click the "Assign Device Type" button.
   The "Insert Object(s) - Assign Device Type" dialog box opens. You will find additional information in the section "Insert Object - Assign Device Type" dialog box (Page 98).
4. To set the network properties, select the inserted PROFINET network in the right window and right-click. Select the entry Object Properties from the displayed shortcut menu.
5. In the Properties dialog of the PROFINET network, enter the device-specific data in the "Communication" tab.
   The subnet ID is the same as was configured in HW Config.
6. Select the PC object in the tree topology.
7. In the properties dialog of the ETHERNET interface, select the "Use network adapter" option and select the desired network adapter.
8. Make the assignment "Assign a network to interface: ETHERNET interface".
9. To insert the S7 DSGW network component, select the "PROFINET network" object in the right window and right-click. In the displayed shortcut menu, select the **Insert New Object > Object** command. In the dialog box that opens, enter the name of the S7 DSGW network component.
10. To set the device address, select the inserted S7 DSGW network component in the right window and right-click. Select the entry Object Properties from the displayed shortcut menu.
11. Enter the device-specific information (IP address) in the "Communication" tab of the Properties dialog of the S7 DSGW network component.

Creation of the "PROFIBUS DP network" object

Insert the "PROFIBUS DP network" object into the "S7 DSGW" object.

Importing/creating the project structure

1. Create the plant structure or import the DP structure of a project.
2. Configure the communication properties of the "PROFIBUS DP network" object.
   - Subnet ID (the same ID that was configured in HW Config)
   - PROFIBUS CP slot (slot number of the CP DP master)
   - DP master address (DP address of the CP DP master)

Communication

Check whether communication is possible (e.g. Upload to PG/PC, download to device, online view).

8.3.1.9 Integrating a HART server network

You can use SIMATIC PDM to configure HART devices for the following networks:

- **Multiplexer networks**
  - Multiplexer network with panel (for example, MTL multiplexer)
  - Multiplexer network without panel (for example, P+F multiplexer)
- **Wireless Hart gateway**
  You configure a wireless HART gateway as a HART multiplexer.

You need a HART server application in the project to integrate and manage these networks. You can find detailed information on the HART server in the description or the online help for this product.

- You can address multiplexers using the HART server. You can obtain more information from the device manufacturers.
- The HART server of SIMATIC PDM does not support multimaster operation. Jobs have to be coordinated to avoid conflicts. The coordination must take place on the multiplexer network level.

Requirement

- A HART server is installed on the computer.
- A multiplexer network has been integrated in the HART server.
- A project has been created in the SIMATIC Manager.
- The HART network is physically connected to the PC station.

Note

Integrating a HART multiplexer network

In the HART server, a project has to be created for the multiplexer in order for the configuration data of the multiplex to be available in the process device network view.

Starting the HART server application

Note

HART server

The HART server application should always be open before you configure or integrate HART devices.

You have the following options for starting the HART server application:

- In SIMATIC Manager, select the menu command **Options > SIMATIC PDM > HART server.**
- In the Windows taskbar, select the menu command **Start > Programs > HART server > HART server** (path of the HART server created by SIMATIC PDM setup).

Note

Network address of the HART multiplexer

Enter the network address of the HART multiplexer in the HART server application when you create an I/O system in the HART network.

Starting the HART server application for the first time

To configure communication between SIMATIC PDM and the HART server, proceed as follows:

1. Select the HART server project. Select the menu command **File > Preferences**.
   The "HART Server Preferences" dialog box opens.
2. In the "New Configuration Will Use" section, select the check box according to your settings in SIMATIC PDM.
3. Apply this setting also to the existing project, if required. After it has been applied to an existing project, the devices must be read in again with "Learn".

Note

SIMATIC PDM default settings

The default settings for HART communication in SIMATIC PDM correspond to the "8 char (HART 5), 32 char (HART 6 +)" check box.

Configuring the HART server

1. Select the HART server project. Right-click and select the shortcut menu command **Add Network**. In the dialog box that opens, select the type of network through which the objects are connected:
   - Single Port RS485
   - Single Serial Port
   - TCP/UDP
2. Enter a name in the "**Network Properties**" field.
   SIMATIC Manager later identifies the network based on this name.
   Set the properties of the interface under "**Properties**" and confirm your entries with "**OK**".
   The network is inserted in the project.

   Note

   TAG names

   Ensure that the TAG names of the components do not contain a "." (dot).
3. You can read in the multiplexer data automatically or configure them manually.

– **Automatic reading**:
Select the higher-level object. Right-click and select the shortcut menu command **Learn**. All data (multiplexers and devices) of the selected object are read. A dialog box shows the progress.
While the addresses (multiplexer, etc.) are being checked, the status of all assigned addresses changes from "**not responding**" to "**responding**". If this does not happen, there is a connection error, such as incorrect polarity.

Note

Learning process in a HART server project

You can start the learning process on any level.

- When you select a network, you start the learning process for the entire configuration tree.
- If you select a panel, you start the learning process for the selected partial configuration, meaning for the instruments below the panel level.

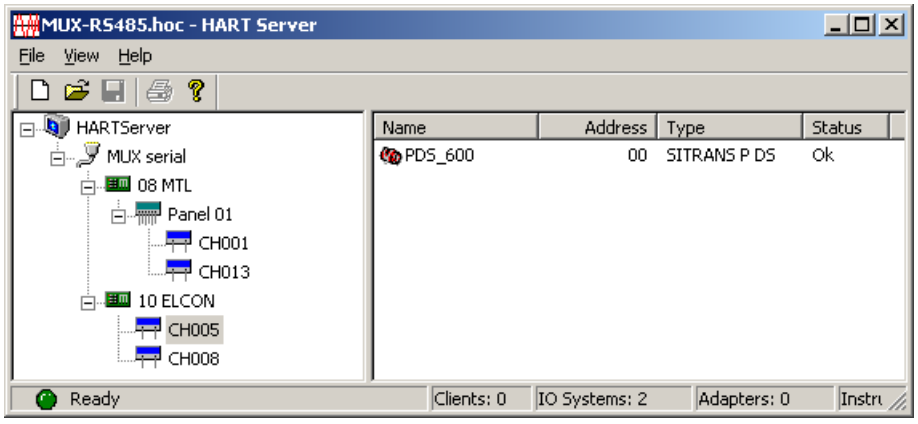


Figure 8-2 Example 1: HART server project with serial multiplexers

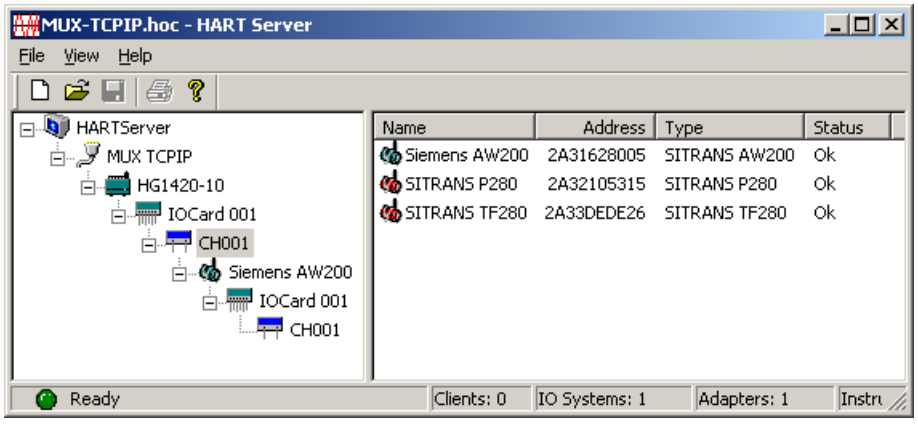


Figure 8-3 Example 2: HART server project with wireless HART gateway

– **Manual configuration**:
  If you want to create the configuration manually, select the project, followed by the shortcut menu command **Add Device** (or **Add IO-System** for Ethernet networks). Enter the required information in the dialog box.
  Continue this procedure until all the devices have been configured.
  The HART server automatically checks whether a HART multiplexer can be reached at the selected address:
  - If you reach a HART multiplexer, its properties are displayed.
  - Otherwise, a message is displayed stating that no connection could be established.
  HART multiplexer with panel: Configure the address information for the panel before you configure the HART devices.

Inserting a HART server in a multiplexer network

1. Check whether the HART server is started.
2. Open the project in the process device network view.
3. Right-click and select the following shortcut menu command: **Insert New Object > Communication network.**
   The "Insert Object - <Networks...>" dialog box opens.
4. Click the button "Assign Device Type" > Object.
   The "Insert Object - <Networks...>" dialog box opens. Select "HART server" as the network type and click the "Assign Device Type" button.
5. Select the following shortcut menu command: **SIMATIC PDM > Synchronize**.
   If you select the "**Object with all subordinate objects and networks**" option, all devices and multiplexers detected in the HART server are automatically applied to the project.
   The hierarchy is transferred to the SIMATIC Manager. The levels shown there depend on the selected multiplexer (e.g. one or two levels).
6. In the process device network view of SIMATIC Manager, insert the HART server in the HART multiplexer network and edit the individual devices.

Configuring the devices

Note the following:

- You can start a learning process for identification of the devices on the multiplexer and assign the device description files (EDD) automatically.
- You can manually configure the multiplexer and the devices. For this purpose, the devices and the computer must be connected and the device names and addresses must be known.

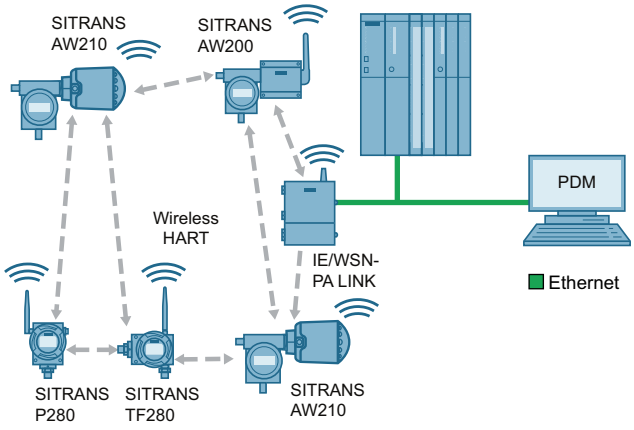
Changing the configuration

If, for example, you change an existing multiplexer network by inserting a new device or replacing a device (must be followed by reconfiguration in the HART server), you can compare the changes in the HART server with the menu command **Edit > SIMATIC PDM > Synchronize**. The synchronization function takes into account the following:

- New hierarchy and devices are inserted.
- Hierarchies and devices that no longer exist are removed.
- Renamed devices are also renamed in PDM.

Wireless HART device on a Wireless HART gateway

Wireless HART devices are integrated into HART multiplexer networks the same way as HART devices.



Renaming devices downstream from a HART server project

If you want to rename a device on a HART multiplexer, observe the order in which the actions must be performed:

1. Open the device with SIMATIC PDM.
2. Enter new TAG in PDM.
3. Select the following shortcut menu command: **SIMATIC PDM > Download to device...**
4. Save in PDM.
   Saving automatically applies the changes to the HART server.

Additional information

Information on configuring the HART server application supplied with PDM can be found in the online help *HART Server Help*(**Start > Programs > HART Server > HART Server Help**).

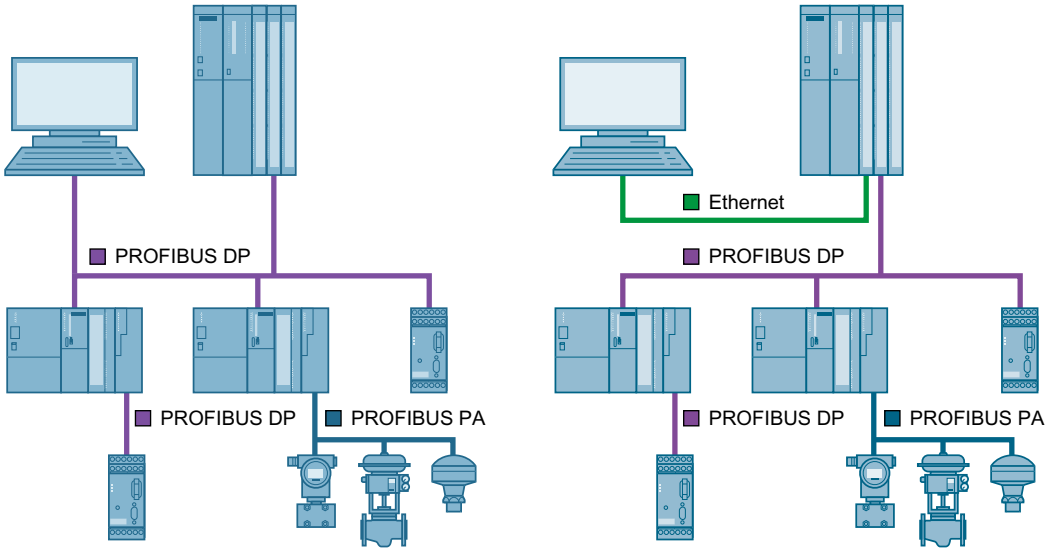
For information on the structure, configuration, and commissioning of wireless HART devices on an IE/WSN PA link (*WSN-PA Link* link), refer to the following documentation:

- Operating instructions titled *SIMATIC NET; IE/WSN PA Link*
- Operating instructions titled *SIMATIC NET; IE/WSN PA Link (Compact)*

8.3.1.10 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 a 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
Header 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 is not configured (the DP/PA couplers with diagnostic capability as of 6ES7157-0AC84-0XA0 can be configured as a stand-alone device).

4. As an alternative, you can insert a PROFIBUS-Link (Y-Link or DP/PA-Link) in a PROFIBUS DP network. After the PROFIBUS-Link , you can insert PROFIBUS devices but no additional PROFIBUS-Link .

Note

The address of the PROFIBUS device that you set in the "Insert SIMATIC PDM Object(s)" dialog box can 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 in the shortcut menu.
   SIMATIC PDM opens. 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.

8.3.1.11 Modular PROFIBUS device (remote I/O)

Creating a 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 select the **Insert New Object > Communications Network** command in the shortcut menu.
   The "Insert Object(s) - <...>" dialog box opens.
3. 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 98)".
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	Header module (selection: remote I/O)
Header 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. Make the following settings for the inserted object.
   You can find additional information on this in the section "Inserting objects (Page 96)".
4. Select the object. Select the **Object properties** command in the shortcut menu.
   The "Properties - <Inserted object>" dialog box 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/O, 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. Select the **Open object** command in the shortcut menu.
   SIMATIC PDM opens. The PROFIBUS DP network is represented in the structure view.
   You can find the remote I/O, 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 in the parameter table.
     Make the required settings and save the object.

Downloading

To transfer the configuration and parameters, select the "<Remote I/O>" object and then select the **Device > Upload to PC/PG...** menu command.

Note

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

8.3.1.12 Connecting a field device to PROFINET

To integrate distributed I/O devices (e.g. ET 200M) or links for connecting intelligent DP or PA field devices (e.g. IE/PB link) via PROFINET, follow these steps:

Creating a 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 field 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., PROFINET network).
PROFINET network	Header module (selection: remote I/O)
Header module (selection: remote I/O)	Modules (selection: module)
Modules (selection: module)	Field device (selection: HART device)

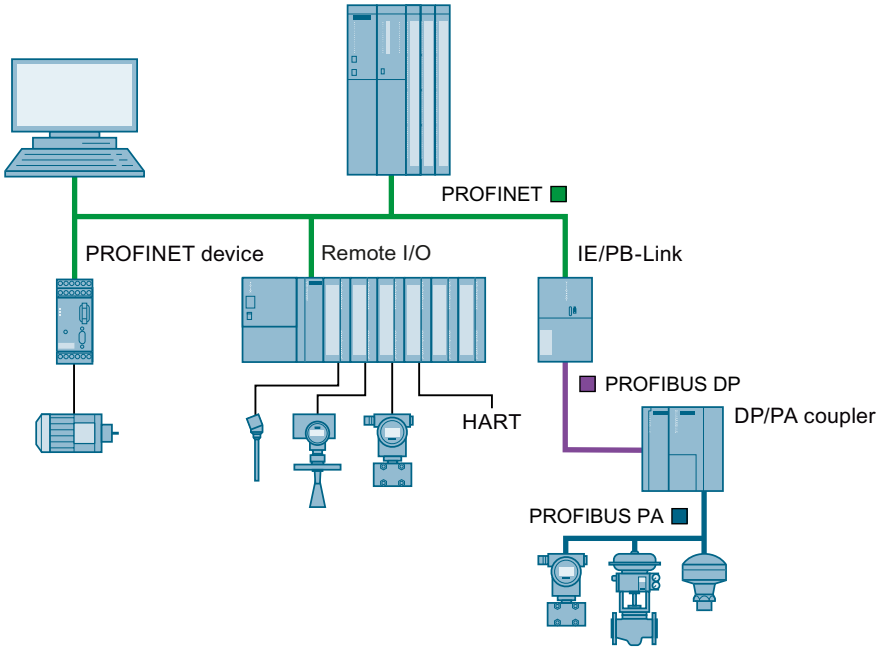
1. Select the higher-level object in the tree structure in the window on the right.
2. In the shortcut menu, select the menu command **Insert New Object > Object**.
   The dialog box "<... SIMATIC PDM – Insert Object(s)" opens.
3. In the dialog box that opens, enter the name of the process tag.

Alternatively, you can add a IE/PB-Link to a PROFINET network. Downstream of the IE/PB-Link , you can then insert PROFIBUS devices . IE/PB-Links are only supported in HW Config in V8.0.

Note

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

Network topology



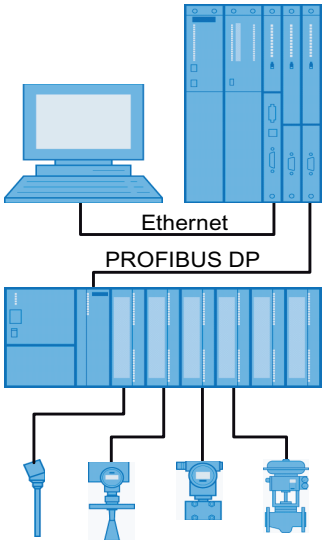
Configuring devices with SIMATIC PDM

1. Select the inserted PROFINET device in the process device network view.
2. Select the **Open Object** command from the shortcut menu.
   SIMATIC PDM opens and the PROFINET 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.

8.3.1.13 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 (PROFIBUS DP)



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 or PROFINET).
PROFIBUS DP network	Header module (selection: remote I/O)

Higher-level object	Object to be inserted
Header 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. Make the following settings for the inserted object.
   You can find additional information on this in the section "Inserting objects (Page 96)".
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 or the PROFINET IP 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. In the process device network view, select the PROFIBUS DP network or the PROFINET network that is the higher-level network of the inserted HART devices.
2. Select the **Open object** command in the shortcut menu.
   SIMATIC PDM opens. The PROFIBUS DP network or the PROFINET network is represented in the structure view.
   You can find the remote I/O, modules, and HART 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 in the parameter table.
     Make 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

To transfer the configuration and parameters, select the "<Remote I/O>" object and then select 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.

8.3.1.14 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 98)" opens.
4. Assign the device type to the inserted device (device description).

8.3.1.15 Integrating an FF field device

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

Information on this can be found in the following documentation:
SIMATIC Process Control System PCS 7, PCS 7 - FOUNDATION Fieldbus

8.3.2 Field devices with redundant bus connection

8.3.2.1 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 are allowed to fully configure one object only (this is referred to as the "master field device" in the following). The other object must not contain substructures. This also applies if redundant partners have been configured in HW Config. In the case of remote I/O (e.g., P+F LB/FB RemoteIO), therefore, you should configure the modules in HW Config only after the redundancy selection.

   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 210)".

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 opens.
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 on which the substructures are displayed, and redundancy can be deactivated again (deactivation only works if the redundant partners have not been configured in HW Config). No substructures are displayed at the partner.

Canceling redundancy

- Delete the partner field device.
- The master maintains all substructures and loses its master status.

Additional information

- Section ""Select object" dialog box (Page 123)"
- Section ""Properties - Find object" dialog box (Page 123)"

8.3.2.2 "Select object" dialog box

Use this dialog box to select the required comparison objects or partner objects.

8.3.2.3 "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 122)

8.3.3 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 in the form of 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 addresses 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 198)").
4. Assign the required device description to the device (section "Device selection (Reassign) (Page 247)"). 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 "Upload to PG/PC (Page 200)").
7. Repeat steps 2 through 6 until all devices are configured.
8. Save the data in the project.

8.3.4 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.

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 "Exporting (Page 187)".
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 "Importing (Page 191)".
9. Click the "Import" button.
   The data record of the import file is not imported into the device completely.
   The following data is excluded from import:
   – Device name
   – Description
   – Message

8.3.5 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 replacement with 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 in the section "Download to device (Page 198)".

Replacing 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 247)"

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 loaded to the device to be integrated.

Procedure (for PROFIBUS devices and FF devices)

Note

Restart

Changing the address will restart the device.

- **Option 1**
  - You use 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 156)".
- **Option 2**
  - You use 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 203)".

8.3.6 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**.

8.3.7 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 144)".

8.3.8 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 (**Edit > Delete** menu command).
- **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)

- To remove redundancy, delete the partner configured as the slave. If you want to delete both redundant partners, both objects must be manually deleted.

8.3.9 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 "Load to Devices" 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 199)".

Additional information

- Section "Parameter table (Page 78)"
- You will find information on FF devices in the section: "Downloading objects in the FF segment (Page 131)" as well as in the *PCS 7 FOUNDATION Fieldbus* commissioning manual.

8.3.10 Interconnecting and downloading FF devices

8.3.10.1 "Interconnection Editor" dialog box

Note

Menu command "Start Connection Editor"

The "Start Connection Editor" menu command is only enabled in HW Config for the bus link (FF Link or Compact FF Link) if the "PDM Foundation Fieldbus" license key is available.

You organize the interconnections for internal FOUNDATION Fieldbus 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 "Connection Editor" dialog.

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 "Connection 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.
- "Internal 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 in the network view of the FF segment and the available outputs. 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 have not yet been saved.

Button	Function
Save	Click this button to save configured interconnections in the SIMATIC project.
Download	Click this button to open the CiF interconnection. **NOTICE!** Use this button only if **no** other changes have been made to the FF segment since the last download of the device.

Icons

Icon	Displayed object	
	FF segment	
	Bus link (FF Link or Compact 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
	Digital output	Not interconnected
	Digital output	Interconnected

Locked inputs or outputs

Inputs or outputs can be locked for the interconnection. Causes:

- The input or output is interconnected internally.
- An I/O address from the process image is already assigned in HW Config for the input or output.
  You can find information about this in the *Process Control System PCS 7, FOUNDATION Fieldbus* documentation; section "How to replace an FF device".

Example of the representation:

 The symbol indicates a locked input.

8.3.10.2 Downloading 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)

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.

Replacing devices

You have the following options for replacing devices with SIMATIC PDM:

- Replacement of a device with one of the same type
- Replacing a device with a similar one

Requirements

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 the parameters of additional function blocks:

- First, configure all interconnections.
- If the complete FF segment is loaded (option for bus link: "Always load FF Link and FF devices"), loading is briefly stopped.
- If the FF segment is being loaded incrementally (option for bus link: "Only load FF Link and FF devices when modified"), the loading continues.
- If necessary, correct the macro cycle settings.

Download

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

Menu command	CPU data	Schedule, bus parameters and interconnections	Device parameters
Always download the hardware configuration in HW Config for the selected CPU: **PLC > Download to Module**	Hardware configuration is downloaded	Downloading Note: Downloading FF segments can only be carried out via HW Config.	-
The menu command **PLC > Compile and Download Objects...** in the SIMATIC Manager.	Program and connections are downloaded	-	-
Select the bus link in SIMATIC PDM **Device > Download to device** Select the following check box in the "Download to device" dialog: "**Object** with all subordinate **objects and networks**".	-	-	All FF devices are downloaded.
Select the bus link in SIMATIC PDM **Device > Download to device** Select the following check box in the "Download to device" dialog: "**Object** with all subordinate **objects**".	-	- Only when replacing a device with one of the same type: Select the check box "Load Schedule to Device".	The FF device is loaded

Note

You can download changes to the automation system in "RUN" mode.
Read the following paragraph: Settings for "Load FF Segment"

Settings for "Load FF segment"

In HW Config, you can adapt the object properties of the bus link that are taken into consideration when loading the AS.

Perform the following steps:

1. Open the hardware configuration in SIMATIC Manager.
2. Open the object properties of the bus link.

3. Select the "Load FF Segment" tab.
4. Make the settings in accordance with the following table:

Note

Bus link - downloading changes after the "Calculate schedule" action

If you have configured the setting "Only load FF Link and FF devices when modified" in the bus link, you must observe the following:

- Only a complete download is possible after executing the action "Calculate Schedule" in "Properties - Foundation Fieldbus -> Macro cycle".
- A complete download is made possible by changing the bus link parameter assignment to "Always load FF Link and FF devices".

Check box	Application	Effect
Only load FF Link and FF devices when modified	Exclude FF segment during AS loading Example: You configure no changes for the FF segment.	If only changes are downloaded, the FF segment continues running during loading.
Always load FF Link and FF devices	Complete download of an FF segment	The FF segment is stopped when it is downloaded completely. **Recommendation** After a complete download of an FF segment, select the option "Only load FF Link and FF devices when modified".
Exclude FF Link and FF devices from loading	Function **for commissioning only**	This function supports you during commissioning of other bus links on the same PROFIBUS. **NOTICE!** **STOP of the FF segment possible** Undefined states may occur in the FF segment when you use this setting.

8.3.11 Printing as PDF

You can use the "Print" button to print dialogs within PDM.

When you click the button, a PDF file is created with the contents of the current tab from the specified EDD element.

The PDF file name is formatted as "Name of dialog box plus date and time in yyyy-MM-dd_hh-mm-ss format".

The PDF file size is set to A4 by default.

In an error scenario, no PDF file is generated, but an error dialog with a explanatory error message is displayed.

Printing of graphics/diagrams is not possible in this development version.

8.4 Communication

8.4.1 Saving/reading the device data

The "Download to device (Page 198)" and "Upload to PG/PC (Page 200)" functions are used 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 data storage.
- The "Download to device" function is used to load all configurable device tags of a device object from the offline data storage to the device.

Procedure

To download data in the network view, plant view or PDM parameter view, follow these steps:

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

During the download, a dialog is displayed that shows the objects you have edited beforehand in a tree structure similar to that of SIMATIC Manager. If any errors occur for a device, the function is aborted for this device. 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 for loading data:

- "Download to device" or "Upload to PG/PC" of the selected device
- "Download to device" or "Upload to PG/PC" of the selected device and the devices on the first level 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 device/Upload to PG/PC of the selected device and of all the devices under the selected device

Errors and messages

During the loading, 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.

Suppressing message dialogs

You can suppress message dialogs during the loading. Select the "Execute 'Load' without info dialogs" check box. You can find additional information using the **Options > SIMATIC PDM > Settings** > The "Load" tab (Page 275) menu command.

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

There are some devices for which confirmation of loading operations is required.

If none of the devices you are using requires any action on the part of the user during loading, you can start the loading process before an extended absence.

8.5 Export / Import

8.5.1 Introduction

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

You can export individual objects as well as modular software objects or modular hardware objects and networks with embedded objects (e.g., field devices).

Note

Export files must be protected against unauthorized access or modification.

External data may only be obtained from reliable sources, using secure connections.

If possible, you should check the integrity before importing data in PDM by adopting appropriate technical measures.

Export

You can export object data from the following environments:

- From SIMATIC PDM
- In the process device network view in SIMATIC Manager
- In the process device plant view in SIMATIC Manager
- In HW Config

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

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

Files are created during the export based on the export object:

- Parameter export files
- Structure export files

Note

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 ""Select object" dialog box (Page 123)").

Parameter export

If only one object is selected for export, only one parameter export is performed to the export directory.

Parameter export files are created only for device objects. No parameter export files are stored for networks or similar objects.

The parameter export file is labeled with the prefix "Param$".

Structure export

If a set of objects (an object with subobjects) is selected for export, a structure export is also performed to the export directory.

Along with the structure export file, a folder of the same name containing the parameter export files of the exported objects is then generated.

Along with the structure export file, a folder of the same name containing the parameter export files of the exported objects is generated:

Export directory

- Struct$<Plant-specific device name>$<Date(YYYYMMDD_hhmmss)>.xml
- Directory Struct$<Plant-specific device name>$<Date(YYYYMMDD_hhmmss)
  - Param$<Plant-specific device name>$<Date(YYYYMMDD_hhmmss)>.xml

In addition to the parameter export files of the individual objects, a structure export file is produced during the export of object structures. The structure export file contains the object topology information including all information required to generate the exported object structure again or to expand an existing object structure. The structure export file is labeled with the prefix "Struct$".

Import

The export of data of a PDM object generates files in XML format. For the import, you can select an XML file and choose whether a parameter import or structure import is be performed.

Parameter import

Parameter export files can only be imported for device objects or "placeholder objects". A "placeholder object" is an object that is produced by the "Insert object" command without a specific type selection.

In principle, the parameter import works as a comparative import.

No objects are deleted by the import process.

Structure import

Structure export files can only be imported for objects of a compatible type or for "placeholder objects". A "placeholder object" is an object that is produced by the "Insert object" command without a specific EDD selection.

The structure import works as an additive import. The address or the slot of the object is most important.

This means that non-existing objects are created, the EDD is assigned, and the parameters are imported.

If objects already exist, the parameters are imported.

No objects are deleted by the import process.

Export/import file (*.xml)

During export, the data is saved in an XML file.

The name of each file generated during the export is structured as follows:

- **Parameter export**
  Param$<plant-specific device name>$<date(YYYYMMDD_hhmmss)>.xml
- **Structure export**
  Struct$<plant-specific device name>$<date(YYYYMMDD_hhmmss)>.xml

Note

The parameter export files are identified with the described prefix only in PDM V8.0.2 and higher.

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

You can control how the parameter export files are 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.

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 representation information file supplied with SIMATIC PDM in the export dialog.
Default setting: <path\<name>.<file format>

- Path: Program Files\Siemens\Automation\SIMATIC_PDM\Templates
- Name: PDM<version>_ExportTransformation
- File format: xsl

Additional information

- Section "Exporting (Page 187)"
- Section "Importing (Page 191)"

8.5.2 Exporting configuration and parameter assignment data

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

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

Export environment

You can export object data in the following environments:

- From SIMATIC PDM
- In the process device network view in SIMATIC Manager
- In the process device plant view in SIMATIC Manager
- In HW Config

Procedure

1. Select a PDM object and choose the associated menu command:
   - The menu command **File > Export...** in SIMATIC PDM.
   - The shortcut menu command **SIMATIC PDM > Export...** in SIMATIC Manager, in the process device network view or process device plant view.
   - The shortcut menu command **SIMATIC PDM > Export...** in HW Config.
2. Make the settings for exporting the device data:
   You can find additional information on this in the section ""Export - ..." dialog box (Page 188)".
3. Click "Start".

Result

The configuration and parameter assignment 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.

Display

The dialog box is updated during the export process.

Status display

- During the process, 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".

Message log

The message log shows all warnings, errors and information related to the export. You can find information on this in the section "Message log (Page 161)".

8.5.3 Importing configuration and parameter assignment data

Depending on the selection, the export generates parameter export files and structure export files in XML format. For the import, you can select an XML file and choose whether a parameter import or structure import is be performed.

Import environment

You can import data from the following environments:

- From SIMATIC PDM
- In the process device network view in SIMATIC Manager
- In the process device plant view in SIMATIC Manager
- In HW Config

The import is always started for an object, e.g., via the menu bar or via the shortcut menu in SIMATIC Manager. The name of the object for which the import dialog was opened appears in the name field of the dialog.

Object consistency check

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

- Imported object
  Type of object from which the import file is generated.
- Existing object (target object)
  Type of object that is selected in the configuration as the target object of the import.

The remaining steps depend on the results of the check:

- **Object types are the same**
  The import can continue immediately.
  The entire import file can be imported to the target object. During import, all the data contained in the import file is overwritten.

- **Object types are different (parameter import)**
  The import process is interrupted by the following message dialog box:
  "Different device types. Only attributes with the same name will be imported."
  If you continue the import, you will see the following result:
  - No parameters will be deleted or added.
  - Only those parameters with the same name will be overwritten on the target object.
- **Object types are different (structure import)**
  The import cannot be started.

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 menu command **SIMATIC PDM > Import...** in the process device network view or process device plant view in SIMATIC Manager.
   - The shortcut menu 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 following data of the import file are imported:
     - Device name
     - Description
     - Message
   - "Import identification data" check box **deactivated**
     The device name, description, and message are excluded from the import.

5. Select the setting for the "Import device parameters" check box:
   - "Import device parameters" check box **selected** (default)
     The data record of the parameter export file is completely imported.
   - "Import device parameters" check box **cleared**
     The data record of the parameter export file is not imported.

   Note

   The "Import device parameters" check box can only be deactivated when a network is selected. If an individual device is selected, the check box is checked and cannot be changed.

6. Click the "Start" button.
   The status of the import is displayed while it is in progress.

Display

The dialog box is updated during the import.

Status display

- During the process, 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.".

Message log

The message log shows all warnings, errors and information related to the import. You can find information on this in the section "Message log (Page 161)".

Additional information

- Section "Replacing devices (Page 125)"

8.6 Diagnostics

8.6.1 Field device diagnostics

Description

SIMATIC PDM provides a detailed diagnostics for integrated field devices.

The icons are assigned when the devices are configured. When a connection is established, device-specific diagnostic information is automatically classified and indicated by the corresponding icons. You will find information on the icons in the section "Overview of Device Icons (Page 144)".

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

- 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 147)"

Section "Updating diagnostics (Page 147)"

8.6.2 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 accessed.
	**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 required to prevent a possible device fault from occurring. Additional diagnostic information is available.
	**Maintenance required** Maintenance must 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. For example, the device is in manual "simulation mode".
	**Out of service** There is a communication connection with the field device. The device is in manual mode. For example, the device is in manual "Out of service" 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 warning** 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)

8.6.3 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 144)"
- Section "Communication Problems (Page 305)"

8.6.4 Identity check

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

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

If the identification check determines a difference between the connected device and the configured device, an informational dialog is displayed with information about the connected device and the configured device.

8.6.5 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 274)

"Update diagnostics - ..." dialog box (Page 232)

Overview of Device Icons (Page 144)

8.7 LifeList

8.7.1 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 (if there is a direct connection between PC and PROFIBUS DP network)
- PROFIBUS PA network
- HART modem network
- Foundation Fieldbus network
- PROFINET 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**
  - Requirement: 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".

Setting the address range for scan operation

When the LifeList is opened, the scan range is set to the complete address range according to the protocol of the network on which the LifeList was started.

PROFIBUS	Address 0 to 126
PROFINET	Address 0.0.0.0 to 255.255.255.255
FF	Address 20 to 251 (minimum value 16, default value 20)
HART modem	Address 0 to 63

Recommendation:

Limit the address range for the scan operation.

A scan operation across a large address range takes longer.

The address range is set via the toolbar or via the "Settings" dialog in the "Options" menu.

This setting cannot be stored centrally since it is network-specific. The setting must be made again each time the LifeList is opened.

Scan without diagnostics

The **"Start Scan"** function is used to start a new scan operation.

Any previous scan result is deleted.

During the first phase of the scan operation, the list of assigned communication addresses is determined based on the selected address range.

For each assigned address, the scan table contains an object whose icon is initially determined by whether or not the object is a (bus) master.

Icon	Meaning
	Network
	(Bus) "master" device
	"Local master" device (own PC)
	Device without EDD assignment
	Communication error
	Device with EDD assignment
	Device after diagnostics run (result: Good)

Icon	Meaning
	Device after diagnostics run (result: no diagnostic support)
	Additional icon meanings can be found in Overview of Device Icons (Page 144)

Note

The first phase of the scan operation cannot be interrupted.

During the second phase of the scan operation, identification data is called and entered in the scan table for each address at which no (bus) master was detected.

For PROFIBUS devices, information is also read from the GSD file and entered in the table, e.g., the device family.

Note

The second phase of the scan operation can be interrupted. The current object will still be completed.

Depending on available licenses (Page 153), automatic EDD assignment also occurs in this phase.

When identification data is successfully called, it is entered in the table and an attempt is made to make an EDD assignment with this information:

- If the EDD assignment is successful, the object is marked with a blue device icon .
- If the associated EDD cannot be explicitly determined, no assignment is made and the object retains its gray device icon  from the first phase.
- If communication problems occur, the object receives the corresponding icon .

Scan with diagnostics

The **"Start scan with diagnostics"** function is used to start a new scan operation with diagnostics.

Any previous scan result is deleted.

The first two phases are the same as for the scan without diagnostics.

In the third phase, the diagnostic function is executed for the objects with EDD assignment and the result is entered in the table.

The diagnostic icon appears and the message text is entered in the "Device status" column.

Note

The third phase of the scan operation can be interrupted. The current object will still be completed.

This function is available only when the appropriate licenses (Page 153) are installed.

Scan result

The devices found appear in the tree view with their object name (TAG).

Other information determined is displayed in additional columns.

The additional information that is displayed depends on the type of network on which the LifeList was started.

Column header	PROFIBUS	FF	HART modem
Available nodes	+	+	+
Address	+	+	+
Manufacturer	+	+	+
Device type	+	+	+
Device ID	+	+	+
Hardware revision	+	+	+
Software revision	+	+	+
Installation date	+	+	+
Ident number	+	-	-
Device family	+	-	-
Profile revision	+	-	+
GSD file	+	-	-
Long address	-	-	+
Device status	+	+	+

Update diagnostics

The **"Update diagnostics"** function is used to once again determine the diagnostic information for the object selected in the scan table.

This function is available only when the appropriate licenses (Page 153) are installed.

Assign address and TAG

If you want to assign a new address or object name to a device, select the **"Assign address and TAG"** function for the selected object.

The "Assign address and TAG..." (Page 156) dialog opens.

Here, you can enter a new object name and a new address and then transfer them directly to the connected device using the "Transfer" button.

Device Selection (Reassign)

If there has not been an automatic EDD assignment of objects, you have the option of making the assignment manually.

Manual assignment is appropriate for objects for which you want to start diagnostics or export the results.

Manual EDD assignment uses the **"**Device Selection (Reassign)**"**. function.

This function is only available when the appropriate licenses (Page 153) are installed.

Object properties

If you start the **"Properties"** function from the LifeList, the "Object Properties" dialog appears, but without the "Communication" and "Document Manager" tabs.

- "General" tab (Page 208)
- "Device" tab (Page 208)
- "Diagnostics" tab (Page 209)

Note

If the "Object Properties" dialog is started from the LifeList, the "Communication" and "Document Manager" tabs are not displayed and the "Update Diagnostics" button is not visible in the "Diagnostics" tab.

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
- FONDATION Fieldbus via FF Link at PROFIBUS DP

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

8.7.2 Licensing

The functional scope of the LifeList is determined by the installed licenses as follows:

Function		Single Point	Basic	Extended
Set address range for scan		+	+	+
Automatic EDD assignment		-	+	+
File	Export	-	-	+

Function		Single Point	Basic	Extended
Edit	Start 'Scan'	+	+	+
	Start 'Scan with diagnostics'	-	-	+
	Start 'Update diagnostics'	-	-	+
Device	Update diagnostics	-	-	+
	Assign address and TAG	+	+	+
	Device Selection (Reassign)	-	+	+
	Properties	+	+	+

8.7.3 Menus and dialog boxes

8.7.3.1 "File" menu

Export

Exports the determined network, including all of its devices.

The devices identified as bus master objects (e.g. PCs) are not exported.

The **"Export"** function is used to open the "Export - ..." dialog box (Page 188).

Note

If the "Export" dialog is started from the LifeList, the "Document Manager" check box is cleared.

A structure export file is generated during the export from the LifeList.

The parameter export files can only be generated for objects with EDD assignment.

Note

Access to SIMATIC PDM via SIMATIC PDM Server

Export from the LifeList is not available in the browser view of SIMATIC PDM.

Print

You can print out the parameter list for a device.

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 root folder of a device.
  You can find information on the structure view in the section "Structure view (Page 77)".

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".

Close

Closes the change log or LifeList.

8.7.3.2 "Edit" menu

Start "Scan"

Starts a scan operation.

The accessible devices of the network on which the LifeList was started are determined.

Any previous scan result is deleted.

Automatic EDD assignment then takes place, depending on available licenses.

Start "Scan with diagnostics"

Starts a scan operation.

The accessible devices of the network on which the LifeList was started are determined.

Any previous scan result is deleted.

Automatic EDD assignment then takes place, depending on available licenses.

A diagnostics run is started at the conclusion of the automatic EDD assignment.

This determines the diagnostic status of all objects with EDD assignment.

Stop

The current scan operation is stopped.

This function can only be selected if an action is being executed.

You can determine whether an action is being executed from the active progress display.

Start "Update diagnostics"

The diagnostics run is started for the current scan result without starting a new scan operation.

8.7.3.3 "Device" menu

Update diagnostics

The diagnostic information is re-determined for the object selected in the scan table.

The icons are updated and the message text is entered in the table.

This function can only be called automatically or manually for objects with EDD assignment.

Assign address and TAG

The "LifeList - Assign Address and TAG" dialog opens.

This dialog can be used to assign a new address and a new object name to the selected object.

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

When the LifeList has been determined, you can perform the following for the device displayed in the "Online" area in the "LifeList - Assign address and tag..." dialog box:

- 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 text box and both text 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

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

- Manufacturer
- Device type
- Device revision

See also

"Assign address and TAG..." dialog box (Page 204)

Device Selection (Reassign)

This function is used to manually assign a device type and thus an EDD for the selected object.

See also

Creating your own device library using the project filter (Page 56)

Creating your own device library from a collection of device descriptions (Page 57)

Properties

Opens the dialog window containing the properties of the selected object.

See also

Working with the LifeList (Page 149)

8.7.3.4 "View" menu

Messages...

Opens the "Messages" dialog box.

Additional information

Section "Message log (Page 161)"

8.7.3.5 "Options" menu

Settings

Opens the dialog window for setting the address range.

This setting cannot be stored centrally since it is network-specific.

The setting must be made again each time the LifeList is opened.

8.7.3.6 "Help" menu

Help

Displays the help on SIMATIC PDM LifeList.

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

About...

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

8.7.4 Menu bar

Structure

Below, you will find an overview of the LifeList menus.

Menu	Submenu
File	• Export (Page 154)
	• Print (Page 154)
	• Close (Page 155)
Edit	• Start "Scan" (Page 155)
	• Start "Scan with diagnostics" (Page 155)
	• Stop (Page 156)
	• Start "Update diagnostics" (Page 156)
Device	• Update diagnostics (Page 156)
	• Assign address and TAG (Page 156)
	• Device Selection (Reassign) (Page 157)
	• Properties (Page 158)
View	• Messages... (Page 158)
Options	• Settings (Page 158)
Help	• Help (Page 158)
	• About... (Page 158)

8.7.5 Toolbar

The toolbar is located below the menu bar and contains several buttons. You can use the buttons to execute frequently used menu commands without having to open the menu.

Icons

Meanings of the icons used:

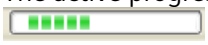
Icon	Menu command	Description
	Start "Scan with diagnostics" (Page 155)	A scan operation is started. A diagnostics run is started at the conclusion of the automatic EDD assignment.
	Start "Scan" (Page 155)	A scan operation is started.
	Stop (Page 156)	The current action (scan or diagnostics) is stopped.
	Start "Update diagnostics" (Page 156)	At the current scan result, a diagnostics run is started without starting a new scan
Min. address	-	Start of range for scan operation

Icon	Menu command	Description
Max. address	-	End of range for scan operation
	Export (Page 154)	The determined network, including all of its devices, is exported.
	Settings (Page 158)	The "Settings" dialog box opens. You can adapt the LifeList according to your requirements and preferences in this dialog box.
	Messages... (Page 158)	The "Messages" dialog box opens.
	Print (Page 154)	The "Print" dialog window opens.
	Help (Page 158)	The help on SIMATIC PDM LifeList opens.

8.7.6 Status bar

Information about current actions is displayed in the status bar.

The active progress display on the right is shown when an action is currently active.



8.8 Logs

8.8.1 Message log

Information about events in SIMATIC PDM is displayed in the message log.

Events in the message log

The message log contains information on the following events:

- Events in online dialogs
- Events when executing "Upload to PG/PC..." and "Download to device..."
- 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 the events to be reported and the log entries to be displayed in the message log.

Message log

The message log contains the following columns:

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

Filtering the message log

You can filter the events shown in the message 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 message log in CSV format (*.csv).

8.9 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
- 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

8.9.1 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 (orange bar)

When a function accesses online values, an animated orange bar is shown in the dialog boxes at the top dialog margin.

The animation is constant for values that are updated cyclically and sporadic for values that are not updated cyclically.

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 165)
  Multiple values/parameters can be displayed in a chart at the same time.
  - Y-T charts
- Tachometer chart (Page 168)
  Each value/parameter is displayed in a separate chart.
- Bar chart (Page 230)
  Multiple values/parameters can be displayed simultaneously in a chart.

Trend chart for variables and constants

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

- Trend chart (Page 165)
  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 229)"
- Section "Displaying process variables and measured values (Page 230)"
- IEC 61804-2
- IEC 61804-3

8.9.2 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.
- The time interval is not updated.

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 that change at certain events

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.

In the x-y diagram, this option is not available and the "Static" option is automatically selected.

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.

8.9.3 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:

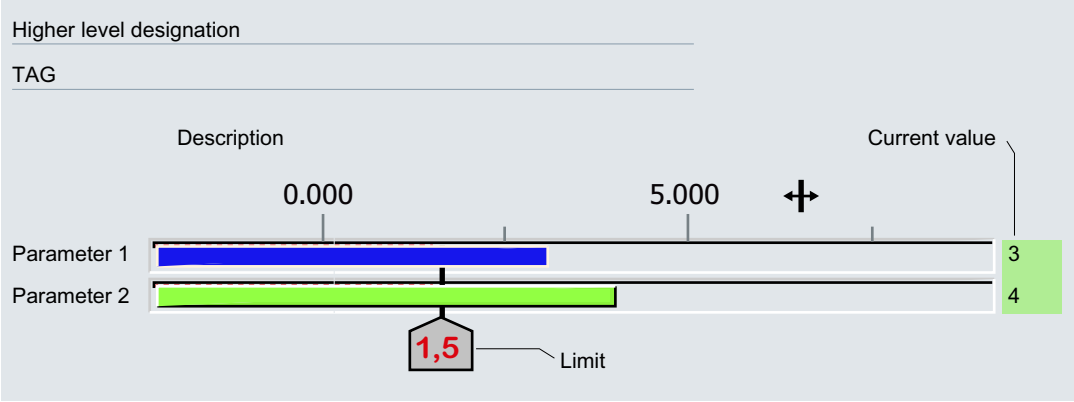
- Name of the chart
- Names of the variables
- Limit (for the warning range)

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 165)"
- Section "Tachometer chart (Page 168)"
- Section "Icons and buttons (Page 169)"
- Section "Work with trends (Page 172)"
- Section "Editing trends (Page 173)"

8.9.4 Tachometer chart

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

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

Chart

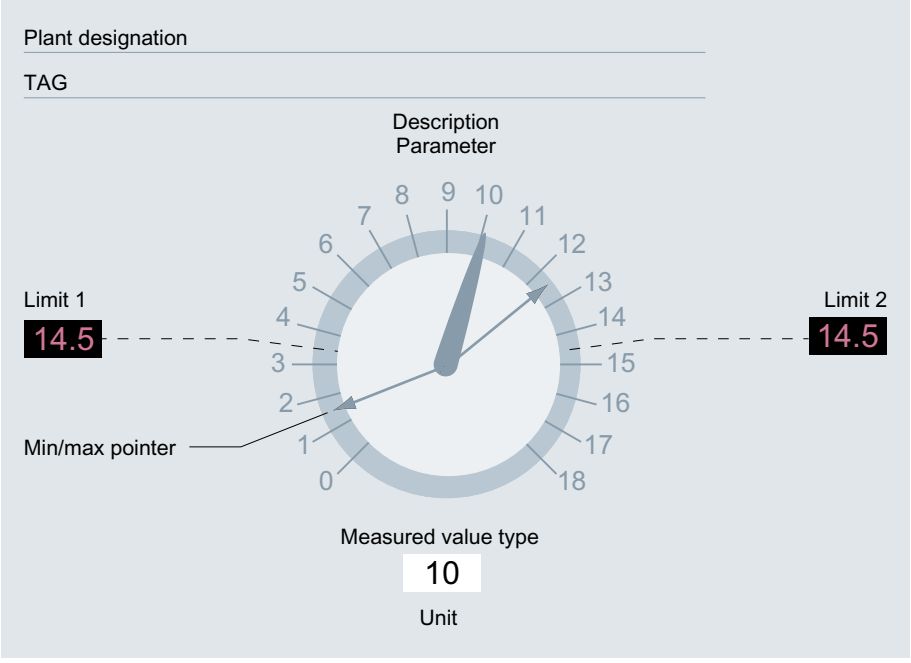
The chart can show the following elements:

- Name of the chart
- Inscription for the tachometer
- 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 tachometer and as a numeric value below the tachometer)

- Inscription of the axis
- Unit

Example

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



8.9.5 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.

Icon	Description
Static	"Display mode (Page 165)" - Allows you to set the trend display mode • Strip • Scope • Sweep • Static
Select Curve	**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. You must first select the trend to be exported in the Trend Manager.
	**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.

<table>
<tr><th colspan="2">Icon</th><th>Description</th></tr>
<tr><td colspan="2">Legend</td><td>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)</td></tr>
<tr><td colspan="2">Measuring line</td><td rowspan="3">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)</td></tr>
<tr><td>White</td><td>Active</td></tr>
<tr><td>Orange</td><td>Passive</td></tr>
<tr><td colspan="2">Shaded trend</td><td>Cause: Data reduction
The trend includes a large number of data points within the displayed range. The individual values cannot be displayed.</td></tr>
<tr><td colspan="2">Dotted trends</td><td>There are no measured values in a range.</td></tr>
</table>

8.9.6 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**
    Select the starting point with the mouse and, keeping the left mouse button pressed, 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 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 range**
    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 range**
    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 and import function
  - You must first select the trend to be exported (as well as a trend that is to be edited) in the Trend Manager.

8.9.7 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. You can only edit data (variables and constants) in charts with SIMATIC PDM 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 that can be edited

Note

You can only edit trend points if the respective function is allowed 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.
- **Moving 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 169)"

8.10 Asset management

8.10.1 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 standardized symbols.
  You can find information on this in section "Overview of Device Icons (Page 144)".
- 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 section "Exporting (Page 187)".
- Device-specific information and profile information is displayed in multiple languages, provided that such information can be extracted from the device description files.

NOTICE
Limited functionality For use of the HART Server functionality, you must be logged onto the SIMATIC PDM Server locally.

8.10.2 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.

Note

When PDM is integrated in PCS 7 and Asset Management is used, we recommend that you do not activate the function "Transfer maintenance alarm to MS station". Alarms that are only recorded by PDM and not transferred via the status of the process value could lead to the failure of process tags. However, if you wish to actively monitor HART field devices and also record diagnostic events that are not shown in the HART status, this function must be activated.

SIMATIC PDM Maintenance Station

Before activating process control, check the setting for the WinCC project type in WinCC Explorer. A single-user 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 to be able to use the diagnostics function of SIMATIC PDM.

Requirements

- The Windows user using the ASSET must be a member of the "SIMATIC HMI" Windows group.
- 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 using the "Assign current project" button.
5. Click "OK".

Start SIMATIC PDM ASSET Service

Note

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

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



Start/stop the SIMATIC PDM ASSET Service.
The "SIMATIC PDM Asset Service Manager" dialog box opens.

"Stop" button

When you click this button, the SIMATIC PDM Asset Service stops.

"Start" button

When you click this button, the SIMATIC PDM Asset Service starts.

"Allow automatic start/stop" check box

If this check box is selected, the Asset Service can be started and stopped by other components (e.g. WinCC RTO, SAM, project archiving).

During archiving, the Asset Service is stopped and given a "lock flag" so that other components cannot start the Asset Service and thereby interrupt the archiving.

- If the Asset Service was activated prior to the archiving, it is started again automatically once archiving is finished and the "lock flag" is removed.
  Start and stop commands of the Asset Service Manager always have higher priority, for example, they can start the Asset Service during ongoing archiving.
- If this check box is not selected, the Asset Service can only be started and stopped by the Asset Service Manager. The following applies then:
  - If the Asset Service is started, archiving will fail.
  - If the Asset Service is stopped, all faceplate queries via SAM are rejected with an error.

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.

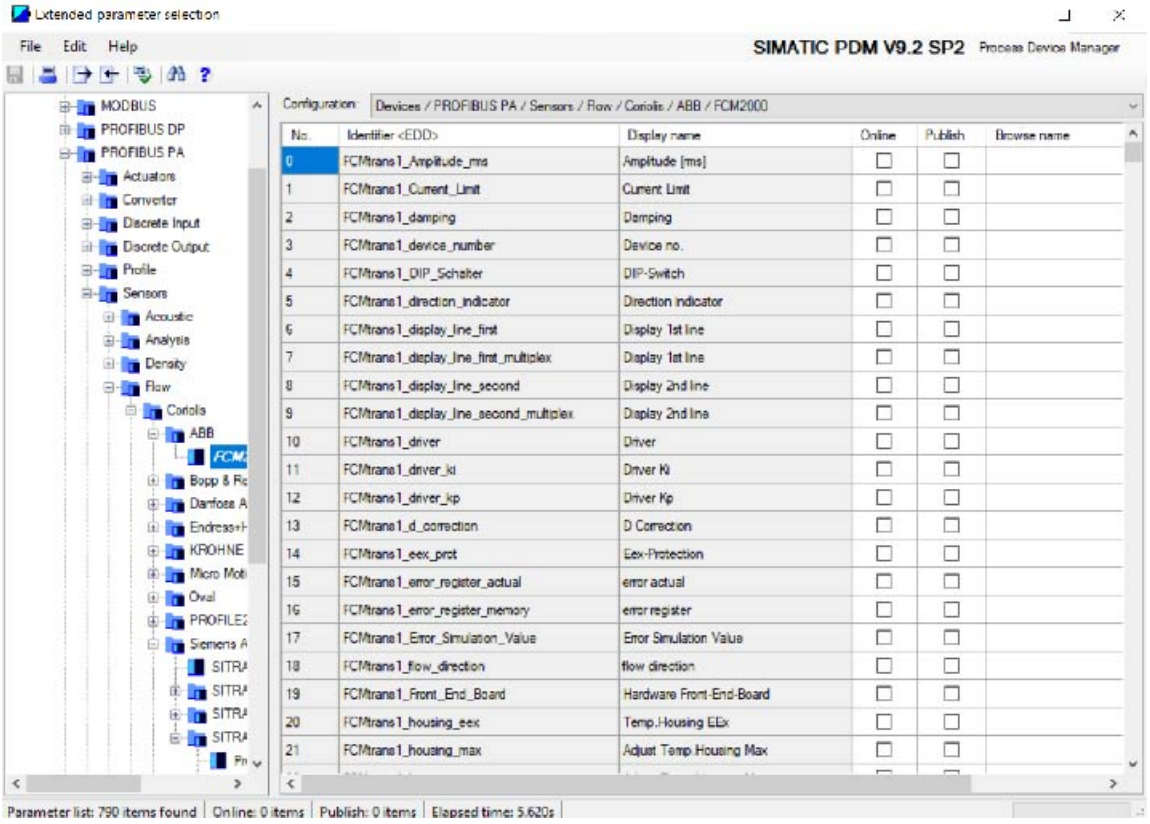
8.11 Extended parameter selection

8.11.1 Working with "Extended parameter selection"

Introduction

The "Extended parameter selection" view enables you to select specific parameters for the device type selected in the tree topology.

The parameter selection configurations can be made individually for the different device types.



Main window "Extended parameter selection"

The main window "Extended parameter selection" remains on the screen during the entire work session and is partially or completely covered by additionally activated dialog windows.

The main window has the following layout

Title bar	The product name is displayed.
Menu bar	You can call up the functions of the view via the menu bar.
Toolbar	The toolbar provides quick access to a few menu commands.
Tree topology	The devices with device description are displayed in a hierarchical structure (catalog path). The device types for which a parameter selection is to be configured are selected in the tree topology.
Configuration list	The list with the device types of all parameter selection configurations currently available in the configuration set.
Parameter list	The table containing all device parameters of the selected device type.
Status bar	Contains information on the current processes.

Tree topology

The catalog tree contains all device types that were integrated into the PDM catalog using the PDM Device Integration Manager (DIM).

After selecting a device type, the "Build parameter list" menu command can be used to create a list of all device parameters.

While the list is being created, the progress indicator in the status bar is active.

At the end, the selected device type is displayed in the left tree topology in "bold + italics".

Configuration list

The "Configuration" drop-down list shows all device types with a parameter selection configuration that are currently contained in the configuration set.

You can easily switch to another device type by selecting another entry from the "Configuration" list or by selecting the corresponding device type in the tree topology.

If the device type selection in the configuration list is changed, the selection in the tree topology is automatically adapted as well.

Parameter list

The parameter list with all device parameters enables you to configure the "Parameter selection" for the selected device type.
This is done by editing the "Online" and "browse name" properties of the relevant device parameters.

The parameters are displayed in a table with the following columns:

- No.: Sequential numbering of all parameters
- Identifier <EDD>: Identifier of the parameter as defined in the corresponding EDD
- Display name: Language-specific name of the parameter defined in the EDD of the device
- Online: Column with check boxes for selecting a parameter

  Note

  The only parameters that can be marked as "Online" are those for which the EDD provides communication information for reading out the parameter from the device

- Browse name: Text column to define a general key to access the parameter in the PDM export file or to publish it to the maintenance station for further processing.

  Note

  The value entered as "browse name" must comply with the following rules:

  - Latin-1 characters only
  - The characters " .\'%?*:" are not allowed and are replaced by "$"

  Invalid characters are automatically replaced after editing.

The check boxes can be enabled/disabled individually and in groups. To edit groups, first select the corresponding cells and then enable or disable them using the shortcut menu

Build parameter list

Parameter selection configurations can be created using the **"Build parameter list"** menu command.

Reset parameter list

Parameter selection configurations can be reset using the **"Reset parameter list"** menu command.

The selected configuration is displayed in the dialog box and can be selected.

If the "Remove from configuration data set" option is selected, the selected configurations are removed and no longer appear in the configuration list,

Export configurations

The **"Export..."** menu command enables you to export the parameter selection configurations to a separate file (xml).

The Export dialog box opens with the currently selected device type. It can export the configuration of a single device type or select multiple device types.

The name of the export file is fixed and depends on the number of configurations to be exported.

Each export file has a creation time stamp.

Note

Please save the exported configuration file for later reuse, for example after a new installation of the computer!

Import configurations

The **"Import..."** menu command enables you to import the parameter selection configurations from a separate file (xml).

After selecting the file to be imported, a list of all configurations in this file is displayed.

The configurations that are not present in the configuration set are automatically selected for import.

The configurations in the list can be selected individually or with the "Select all" button.

Clicking the "Deselect existing configurations" button deselects the configurations already present in the configuration set.

Check configurations

The **"Check configuration"** menu command checks the search names of the currently selected configuration.

To ensure that the configuration works, it is important to define unique names. A "search name" may only be assigned to one parameter within the configuration for a device type.

Print configurations

The **"Print"** menu command lets you print out parameter selection configurations for documentation purposes.

The configurations are printed one after the other, each in a separate table.

Only configurations with "non-empty" device parameter lines are printed,

See also

Licensing (Page 153)

"LifeList - Assign address and TAG..." dialog (Page 156)

"General" tab (Page 208)

"Device" tab (Page 208)

"Diagnostics" tab (Page 209)

Overview of Device Icons (Page 144)

Menu bar (Page 185)

Toolbar (Page 185)

Status bar (Page 186)

8.11.2 Menus and dialog boxes

8.11.2.1 "File" menu

Save

Saves the current parameter selection configuration.

Storage location

Note

The default storage location is determined from the PDM settings. If you want to adapt the memory location, select the path in the "General" tab (**Options > Settings for SIMATIC PDM** menu).

Export...

Starts the export from the selected parameter selection configuration.

The **"Export"** function is used to open the "Export - ..." dialog box (Page 188).

Starts the import from the selected parameter selection configuration.

You make the settings for the import in the "Import - <Object name>" dialog box.

See also

"Import - ..." dialog box (Page 192)

Print

Prints the selected parameter selection configuration.

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** or click the "Print" button .
   The "Print" dialog box opens.
2. Select the required options.
3. Click "OK".

Close

Closes the "Extended parameter selection".

8.11.2.2 "Edit" menu

Build parameter list

The list of all device parameters for the selected device type is created.

While the list is being created, the progress indicator in the status bar is active.

At the end, the selected device type is displayed in the left tree topology in "bold + italics".

Reset parameter list

All parameter selection configurations are reset by deleting all settings made in the parameter list.

Check configuration

The currently selected configuration is checked for search names.

To ensure that the configuration works correctly, it is important to define unique search names.

A "search name" may only be assigned to one parameter within the configuration for a device type.

A warning is displayed if duplicate search names are found.

8.11.2.3 "Help" menu

Help

Shows the help for "Extended parameter selection".

About...

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

Find

The "Find" dialog window opens.

8.11.3 Menu bar

Structure

Below, you will find an overview of the "Extended parameter selection" menus.

Menu	Submenu
File	• Save (Page 183)
	• Export... (Page 183)
	• Export... (Page 183)
	• Print (Page 183)
	• Close (Page 184)
Edit	• Build parameter list (Page 184)
	• Reset parameter list (Page 184)
	• Check configuration (Page 184)
Help	• Help (Page 185)
	• About... (Page 185)
	• Find (Page 185)

8.11.4 Toolbar

The toolbar is located below the menu bar and contains several buttons. You can use the buttons to execute frequently used menu commands without having to open the menu.

Icons

Meanings of the icons used:

Icon	Menu command	Description
	Save (Page 183)	The current parameter selection is saved in PDF format.
	Print (Page 183)	The current parameter selection is printed. Opens the "Print" dialog window. Select a printer that is available on the computer.
	Export... (Page 183)	Starts the export from the selected parameter selection configuration.
	Export... (Page 183)	Starts the import from the selected parameter selection configuration.
	Check configuration (Page 184)	Starts the check of the selected parameter selection configuration.
	Find (Page 185)	The parameter list is searched. Opens the "Find" dialog box. Enter a character string and specify the search options.
	Help (Page 185)	The help on SIMATIC PDM LifeList opens.

8.11.5 Status bar

Information about current actions is displayed in the status bar.

- The total number of parameters in the parameter list
- The number of parameters currently marked as "Online"
- The number of parameters currently marked as "Publish"
- The active progress display on the right is shown when an action is currently active. 

Menus and dialog boxes in SIMATIC PDM

9

9.1 "File" menu

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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, device-specific functions are grayed out in the second window and can only be accessed in the window that was opened first.

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.

9.1.1 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.

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu item is grayed out in the second window and can only be accessed in the window that was opened first.

9.1.2 Exporting



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.

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

See also

"Export - ..." dialog box (Page 188)

9.1.2.1 "Export - ..." dialog box

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

Selecting the export path and transformation file

- **Export path**
  Enter the path for storing the generated XML files in the input box. The name of each exported XML file is structured as follows:
  - **Parameter export**
    Param$<plant-specific device name>$<date(YYYYMMDD_hhmmss)>.xml
  - **Structure export**
    Struct$<plant-specific device name>$<date(YYYYMMDD_hhmmss)>.xml

  Note

  The parameter export files are identified with the described prefix only in PDM V8.0.2 and higher.

- **HTML transformation file**
  - XSL file that contains the information for display in HTML format.
  - In this input box, you can specify a file containing reference data for the appearance of the export file (XML format). To create plant-specific HTML transformation files, use the default file as your starting point.

Selecting data for export

The following information can be included in the parameter export:

- **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.

If all three check boxes are cleared, only the structure export file is created. A folder containing parameter export files is not created.

The structure export file contains information on the object topology with all details required to generate the exported object structure again or to correspondingly expand an existing object structure.

Export file

To export, select the following categories for the export, which are listed in different sections in the export file:

Category	Description
<Device>	Contains information about the device
<Id>	The PDM-internal object ID of the device.
<Type>	The PDM-internal object type of the device.
<Class>	The PDM-internal object class of the device.
<ObjectPath>	The placement of the device in the communication path.
<OnlineValues>	Specifies whether an online export is present.
<CatalogPath>	The placement of the device in the EDD catalog.
<ObjectName>	The object name of the device.
<Section>	The PDM-internal classification of the device.
<DeviceParameters>	Contains the parameters of the device.
<Documents>	Attributes of the document manager
<Diagnostics>	Attributes of device diagnostics

An individual attribute contains the following elements:

Attribute	Description
Name	Name of the attribute
Type	Data type of the attribute
Label	Identifier of the attribute
ParamViewMember	Specifies whether the attribute is visible in the parameter view of PDM.
DisplayValue	The value of the attribute that is used for the display.
Import	Specifies whether the attribute is taken into account during the import.

Attribute	Description
State	Status of the attribute Bit array whose value is formed from the following decimal values: • 0: OK • 1: Invalid value • 2: Reserved by the system • 4: Reserved by the system • 8: Changed by the user • 16: Changed by the communication • 32: Initial value • 64: Readable values only • 128: General error • 256: Unit conversion failed • 512: Values could not be updated by the communication • 1024: Value could not be transferred to the device • 2048: Reserved by the system • 4096: Reserved by the system
Unit	Unit of the attribute

"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 "Selection" area to make your selection.

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

List

The list in the dialog box shows the objects for which an export file is to be generated, based on the option selected in the "Selection" area.

The following icons are used to indicate the processing status:

Icon	Status
	The export was performed without error.
	Messages and warnings occurred during the export.
	The export was not performed due to an error.

Icon	Status
	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

- During the process, 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 message log.

Start

Starts the export.

Stop

Stops the export.

The object currently being processed will be completely processed.

Close

Closes the dialog box.

9.1.3 Importing



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.

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

See also

"Import - ..." dialog box (Page 192)

9.1.3.1 "Import - ..." dialog box

In the "Import - <Object name>" dialog box, make the settings for the import of device data and start the import function.

The import assigns the data created for a device of network by the export to XML files to an existing device or network. You can select these XML files as the import file.

Import file

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

As soon as you enter the import file (parameter import file or structure import file), a device type consistency check is performed automatically. You can find information on this in the section "Importing configuration and parameter assignment data (Page 140)".

Check box "Import only if device type matches"

The check box "Import only if device type matches" can be used to set the following:

- Check box "Import only if device type matches" **selected** (default)
  If the device type matches, the data record of the parameter export file is imported.
- Check box "Import only if device type matches" **cleared**
  The data record of the parameter export file is imported. However, if the device types are not identical, only the parameters with the same variable name are imported.

"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 following data of the parameter export file are imported:
  - Device name
  - Description
  - Message
- "Import identification data" check box **deactivated**
  Certain identification data, i.e., device name, description, and message, are excluded from the import.

"Import device parameters" check box

You can activate the "Import device parameters" check box to make the following settings:

- "Import device parameters" check box **selected** (default)
  The data record of the parameter export file is completely imported.
- "Import device parameters" check box **cleared**
  The data record of the parameter export file is not imported.

Parameter import

If the file to be imported is a parameter export file, only the exported object appears in the tree view. The object is shown with a blue icon because the object model was not adapted in the project. The object is prepared for the parameter import, which is started using the "Start" button.

Parameter export files can only be imported to device objects or "placeholder objects. A "placeholder object" is an object that is produced by the "Insert object" command without a specific type selection.

Note

For FF devices, the type of the object to be imported must correspond exactly to the type of the start object. If they do not match, a corresponding message is displayed in the "Status" text box and the import cannot be started.

The actual import is started using the "Start" button.

The import is interrupted by the following message dialog box if the object types are different. If you nevertheless want to continue the import, you can expect the following results:
– No parameters will be deleted or added.
– Only parameters with the same name will be overwritten in the target object.

Structure import

If the file to be imported is a structure export file, the structure of the exported object appears in the tree view. All device objects are "grayed out". This is an indicator that these objects have not yet be included in the configuration.

Structure export files can only be imported for objects of a compatible type or for "placeholder objects". A "placeholder object" is an object that is produced by the "Insert object" command without a specific EDD selection.

The import operation is started using the "Start" button.

Phase 1

First, the object structures in the project data storage are adapted as needed:

- Missing objects are generated. For device objects, the check to determine whether an object is 'missing' relies exclusively on address information and not on the name information.
- Adaptation of the type assignment after a positive consistency check.
- If the "Import identification data" check box is selected, the identification data is adapted.

Note

During Phase 1, the import cannot be canceled.

Phase 2

The object structure based on the file to be imported is structured after conclusion of "Phase 1". All device objects are shown in "blue" to indicate that they have been incorporated in the configuration.
If problems occur during the creation of the object structure, the relevant import objects are marked in the tree and messages are generated. These can be called up using the "Messages" button.
In Phase 2, the parameter import occurs for all objects in the file to be imported.

Note

During "Phase 2", the import can be canceled. The object currently being processed will be completely processed.

After the conclusion of "Phase 1", "Phase 2" starts automatically. The parameter import then follows for all import objects for which an error was not signaled during the first pass.

List

During the import process, the "Import" dialog box shows which objects have been processed so far in a tree.

The following icons are used to indicate the processing status:

Icon	Status
	The import was performed without error.
	Messages and warnings occurred during the import.
	The import was not performed due to an error.
	The object is currently being processed elsewhere.
	The import was not performed for this device.
	The function is not supported by this device.
	The import is currently running for this device.

Display

The dialog box is updated during the import.

"Status" display

- During the process, 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.".

Messages

Errors and warnings are entered in the message log.

Start

Starts the import.

Stop

Stops the import.

The object currently being processed will be completely processed.

Close

Closes the dialog box.

9.1.4 Print

You can print out the parameter list for a device.

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 root folder of a device.
  You can find information on the structure view in the section "Structure view (Page 77)".

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".

9.1.5 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.

9.1.5.1 "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.

9.2 Editing (depends on device)

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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, device-specific functions are grayed out in the second window and can only be accessed in the window that was opened first.

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.

9.3 "Device" menu

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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, device-specific functions are grayed out in the second window and can only be accessed in the window that was opened first.

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.

9.3.1 Download to device



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.

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

Errors and messages

During the loading, 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.

Suppressing message dialogs

You can suppress message dialogs during the loading. Select the "Execute 'Load' without info dialogs" check box. You can find additional information using the **Options > SIMATIC PDM > Settings >** The "Load" tab (Page 275) menu command.

Additional information

You can find information on loading FF devices in the *PCS 7 FOUNDATION Fieldbus* commissioning manual

See also

"Download to device - ..." dialog box (Page 199)

9.3.1.1 "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/operating instructions
Object	Loads only the data of the selected object.
Object with all subordinate objects	Loads the data of the selected object, including all subordinate objects. Note: The tree structure can be expanded and collapsed for objects with subordinate objects.
Object with all subordinate objects and networks	Loads the data of the selected object, including all subordinate substructures.

"Load changed parameters only" check box

If this check box is selected, only the changed parameters are transmitted to the devices.

Note

If warnings or errors are displayed during a complete load or complete import of the parameters of a field device, it is not recommended to run the "Load to devices" functions with the option "Load changed parameters only" for all instances of the field device type.

Running the "Load to devices" functions with the "Load changed parameters only" option does not prevent a possible restart of the field device by changing the parameterization. The restart behavior is defined by the field device manufacturer.

Note

The device manufacturer must explicitly confirm compatibility with the "Load changed parameters only" PDM function or the function must be checked and approved by the user before its use.

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 symbols:

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

Display

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

Status display

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

Message log

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

See also

Overview of Device Icons (Page 144)

9.3.2 Upload to PG/PC



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

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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

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 loading, 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.

Suppressing message dialogs

You can suppress message dialogs during the loading. Select the "Execute 'Load' without info dialogs" check box. You can find additional information using the **Options > SIMATIC PDM > Settings >** The "Load" tab (Page 275) menu command.

Additional information

You can find information on loading FF devices in the *PCS 7 FOUNDATION Fieldbus* commissioning manual

See also

"Upload to PG/PC - ..." dialog box (Page 201)

9.3.2.1 "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/operating instructions
Object	Loads only the data of the selected object.
Object with all subordinate objects	Loads the data of the selected object, including all subordinate objects. Note: The tree structure can be expanded and collapsed for objects with subordinate objects.
Object with all subordinate objects and networks	Loads the data of 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.

You can find more detailed information on icons in the section "Overview of Device Icons (Page 144)".

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

Display

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

Status display

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

Message log

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

9.3.3 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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

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 the process device view, select the **Edit > Open object** menu command.
   - Double-click the device in HW Config.
2. Select the **Device > Assign address and TAG ...** menu command.
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:
     The device designation (TAG) of the field device in the plant configuration
4. Click "Find":
   - A search is performed for a device at the online address entered.
   - If a 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 204)"
- Section "Working with the LifeList (Page 149)"

9.3.3.1 "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 to search for a device address online. Search criterion: • For PROFIBUS devices: Online address only • For FF devices: The online address or the device name The name and address of an online device found is 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 149)

9.3.4 Value comparison



Starts the comparison of device parameters.

You make the settings for comparing device parameters in the "Value Comparison" dialog box (Page 206).

See also

Parameter table (Page 78)

9.3.4.1 "Value Comparison" dialog box

Purpose

You start the comparison of device parameters in this dialog box. The value comparison is always based on the device parameter values saved in the project.

The device parameter values saved in the project can be compared with the following data types:

- **Offline data**
  Device parameter values saved in the project.
- **Online data**
  Parameter values currently saved in the device.

Comparisons

The following comparisons are possible:

- Comparison of the parameters of one device (offline/online parameter comparison)
- Comparison of the parameters of two devices:
  - Offline/online parameter comparison

Selecting check boxes

The loaded object is the one which is currently selected in SIMATIC PDM in parameter assignment mode.

Comparison object	Check box	Additional information
Online data of the loaded object	Compare with online data of the loaded object	1. Click "Apply". The online data is read in from the device. 2. Click "OK".
Offline data of another object	Compare with offline data of another object	1. Click "Select object" dialog box (Page 207). The dialog box opens. 2. Select the comparison object that you want to search for. 3. Click "Apply". The online data or offline data of the comparison object is read. 4. Click "OK".
Online data of another object	Compare with online data of another object	

Display

The Parameter table (Page 78) is expanded by the columns for value, unit and status of the comparison object. These columns cannot be edited.

Display	Meaning
No color difference in columns	The respective parameters and the associated values are identical for both devices.
A yellow box in the value or unit column of the comparison object.	The parameter is available in both devices. The associated values are different.
Yellow box in the parameter column	The parameter is only available in one device.
	A plant-specific value check must be carried out. Automatic analysis is not possible.
	The value has been changed.

9.3.4.2 "Select object" dialog box

Use this dialog box to select the required comparison objects or partner objects.

9.3.5 Priority

This menu command allows you to assign a priority (Nothing, Important, SIF) to the object. In the plant view, for example, you can then see this value in the "Priority" column.

9.3.6 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
- ...

9.3.6.1 "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 271)".

Field	Explanations/operating 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*	
Text 3*	
Author	Displays the name of the author.
Date created	Displays the date on which the PDM object was created.
Last change	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).
Priority*	Select an object marking here (nothing, important, SIF). This value is then displayed in a "Priority" column in the plant view.
Device checked	Shows the time stamp for when the attribute "Device checked (Page 224)" was activated.
Project-specific write protection	Shows the time stamp for when the attribute "Project-specific write protection (Page 265)" was activated.

* Entry can be changed.

9.3.6.2 "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/operating instructions
Device type	Shows the device type as specified in the "Device Selection" dialog box.
Manufacturer	Shows the manufacturer.
Order number	Shows the order number of the device.
Catalog path	Shows the catalog path.
Device DDL	Shows the device description file assigned to the object.
EDD revision	Shows the version of the device description file (hexadecimal format).
Device revision	Shows the hardware version of the device (hexadecimal format).

9.3.6.3 "Diagnostics" tab

Purpose

This tab shows information about the communication of the device. The icon shown for the device depends on the information available. If communication is disrupted, the device status and the date of the last test are empty.

Field	Explanations/operating instructions
Communication status	Shows whether the communication is good or faulty.
Last communication	Shows the date on which the last communication with the device took place.
Message text	Shows detailed information about the communication as well as communication errors or connection problems.
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.

9.3.6.4 "Communication" tab

Purpose

In this tab, you can display the address of a device (short address and long address for HART devices). If the device was configured in the process devices network view, you can change the address.

Field	Explanations/operating instructions
Short address* (default value: 0)	The short address is displayed here for HART devices.
Long address* (default value: 0x0000000000)	For HART devices, the long address is displayed here. As soon as the device is known, the long address is stored.
DP master address* (default value: 0)	The address of the hierarchical master on the bus. This parameter is optional – this value is ignored when configuring via HW Config.
IP address (default value: 0.0.0.0)	The address that is based on the Internet protocol.

* Entry can be changed.

Table 9-1 "Properties" area

Field	Explanations/operating instructions
Master type (default value: Secondary master)	The HART modem uses the serial port of a PC and a HART modem or HART interface connected to it to communicate with the connected HART devices. It can be both primary and secondary master.
"Ignore secondary master" check box	If there is no secondary master, the time behavior can be optimized and devices can be addressed faster by enabling this option.
"Prefer 'Long address'" check box	Once a device is known, communication with it is performed only via the long address. In this case, multiple devices on the same HART modem can have the short address 0. To make a device known with short address, no other devices can be connected to the HART modem.
MODBUS communication (default value: Serial)	Serial: COM interface must be suitably set for the device (interface, baud rate, etc.). IrDA: USB infrared adapter required. The device (1 at a time) then communicates via this adapter. (Multiple USB IR adapters are not supported.)
Response time* (default value: 1000 ms)	This is the time waited to obtain a response from a MODBUS device. If this value is too low, it is possible that no connection to the device will be made. If it is too high, the communication can be extremely slow.
Subnet ID* (default value: 0x0000 0x0000)	The S7 subnet ID of the network. This parameter is optional – this value is ignored when configuring via HW Config.

Field	Explanations/operating instructions
PROFIBUS CP slot* (default value: 2)	The slot address of the PROFIBUS interface. This parameter is optional – this value is ignored when configuring via HW Config.
Rack no. (default value: 0)	Number of the rack. The rack no. can only be 0 or 1.

* Entry can be changed.

NOTICE
HART device replacement For a device replacement, this long address must be set to 0 so that a replacement device can be newly identified. The replacement device must be the only device on the HART modem.

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

Table 9-2 "Redundancy" area

Field	Explanations/operating instructions
"Redundancy activated" check box	There is a redundant partner device for this device.
Corresponding slave	The redundant partner device can be found via this field.
Select object*	A new object can be added with this button.

* Entry can be changed.

A network adapter can be selected for ETHERNET or PROFIBUS devices.

Table 9-3 "Assign assigned network and network adapter" area

Field	Explanations/operating instructions
Assigned network	The selected interface is displayed in this field.
Assign network to interface*	A network can be added to the selected interface with this button.
"Use 'PG/PC Interface' settings" check box*	This device uses an PG/PC interface.
"Use network adapter" check box*	This device uses a network adapter.
Network adapter*	A network adapter can be selected with this field.

* Entry can be changed.

See also

Connecting field devices to a redundant bus system (Page 122)

"Select object" dialog box (Page 123)

9.3.6.5 "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 are 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**. Select the required document from the submenu.

9.3.7 Calibration log

Purpose



You can use the "Calibration log" function of SIMATIC PDM to create calibration logs for field devices. You open the calibration log using the **Device > Calibration log** menu command.

Dialog box

The "Calibration log" dialog box contains the following tabs:

Tab	Settings and information
Test environment (Page 215)	• Field device data • Operator data and test date of the calibration log • Remarks of the operator about the test • Comment field • Settings for the scheduling (default: deactivated) – Service – Measuring circuit test – Calibration
Diagnostics (Page 217)	• Information regarding the display of the communication connection status • Information regarding the display of the device status • Date of the last test • Messages of the last test
Settings for measuring range (Page 217)	Channel-specific information (configurable: maximum of 8 channels) • Channel selection • Configurable settings for each channel: – Measuring circuit unit – Measuring range – Output unit – Output range – Permitted deviation (setpoint/actual value) – Comment fields
Attachments (Page 218)	Configure files that are to be attached to the log. Files with the following extensions may be used: • pdf • doc; docx • xls; xlsx • txt; csv • rtf • jpg; jpeg; png; gif; tiff; tif; bmp • wav; wma • htm; html • chm; hlp **Note:** This function is not available in the SIMATIC PDM Portal.
Comments (Page 219)	• Additional comments for different comment types

9.3.7.1 Menus and dialog boxes

File menu

Log archive

Opens the dialog with the saved logs.

Save

Saves the current log in PDF format

Storage location

Note

The default storage location is determined from the PDM settings. If you want to adapt the memory location, select the path in the "General" tab (**Options > Settings for SIMATIC PDM** menu).

Print

Prints the currently displayed view.

Close

Closes the log.

Options menu

Log settings

Opens the "Log settings" dialog box.

In this dialog box, you can adapt the display of the calibration log according to your requirements and preferences.

"Log settings" dialog box

- **"Heading calibration log" text box.**
  You change the heading for the calibration log in this text box.
- **"Log content" area**
  You configure the visibility of information in the calibration log in this area.

Name of text box	Setting	Visibility
Test environment	You can change the heading for the "Test environment" area in this text box.	Always visible
Identification data	You can change the heading for the "Identification data" area in this text box.	Always visible
Diagnostics	You can change the heading for the "Diagnostics" area in this text box.	If the "Visible" option is selected, this area is visible in the log.
Settings for measuring range	You can change the heading for the "Settings for measuring range" area in this text box.	Always visible
Available Channels	You can set the number of device channels between one and eight in this text box.	-
Attachments	You can change the heading for the "Attachments" area in this text box.	If the "Visible" option is selected, this area is visible in the log.
Comments	You can change the heading for the "Comments" area in this text box.	If the "Visible" option is selected, this area is visible in the log.

Help menu

Help

Opens the help for SIMATIC PDM.

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

About...

Opens the information about the version and the copyright details of SIMATIC PDM.

Tab

"Test environment" tab

Purpose

This tab displays information about the current device. You can change the names in the "Plant" and "Tester" text boxes. Without these names, it is not possible to save and print logs.

The following entries are possible:

- Entering comments
- Enabling scheduling for service monitoring, measuring circuit testing and calibration.

"Measuring circuit identification data" area

Field	Explanations/operating instructions
Plant	You can assign the plant name in this text box.
Process tag	Shows the name of the process tag
Device type	Shows the device type
Manufacturer	Shows the manufacturer of the field device
Article number	Shows the article number of the device
EDD revision	Identifier for an EDD revision
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

"Test details" area

Field/Area	Explanations/operating instructions
Tester	You can assign the name of the tester in this text box.
Date of test	Shows the date of the test
Test medium	
Comment	Enter a comment.

"Scheduling" area

Field	Explanations/operating instructions
"Service" check box	If this check box is selected, you can enter a time for the next service in the text box. The time is monitored. When the time is reached or exceeded, the diagnostic status of the instance is set to "Maintenance demanded".
"Measuring circuit test" check box	If the check box is selected, you can enter a time for the next measuring circuit test in the text box. The time is monitored and when it is reached or exceeded, the diagnostic status of the instance is set to "Maintenance required".
"Calibration" check box	If the check box is selected, you can enter a time for the next calibration in the text box. The time is monitored and when it is reached or exceeded, the diagnostic status of the instance is set to "Maintenance required".

"Diagnostics" tab

Purpose

This tab displays general diagnostic information about the current device.

"Measuring circuit identification data" area

Field/button	Explanations/operating instructions
Communication	Shows whether the communication is good or faulty.
Device status	Shows detailed 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.

"Settings for measuring range" tab

Purpose

You can specify the calibration settings and the information for the measuring circuit test in this tab.

"Selected channel" drop-down list

You can select the channel number (1 ... n) of the active channel in this drop-down list.

"Settings for measuring range for channel 1 ... n" area

Area	Field	Explanations/operating instructions
Measuring range	**Unit of measure**	Enter the current unit of measure.
	Start value	Enter the start value.
	End value	Enter the end value.
Output	**Unit of measure**	Enter the current unit of measure.
	Start value	Enter the start value.
	End value	Enter the end value.
	Permitted deviation between actual value and setpoint.	Maximum permissible deviation between the actual value and setpoint in percent.

Area	Field	Explanations/operating instructions
Characteristics Table	**Table column header**	You can enter up to ten value pairs.
	Measured value	The measured value is specified by the tester as a percentage. The unit of measure cannot be changed here.
	Encoder signal of the specified value	Value is calculated based on the settings and specified measured value.
	Setpoint	Value is calculated based on the settings and specified measured value.
	Actual value	Adoption of the current value
	Deviation in %	The deviation is calculated between the actual value and setpoint. The field turns red as soon as the deviation is outside the maximum permissible tolerance setting.
Comment on hardware		Enter a comment for the hardware.
Comment on monitoring		Enter a comment for the monitoring.
Comment on measuring circuit		Enter a comment for the measuring circuit.

"Attachments" tab

Purpose

You can add up to five attachments in this tab, which you can then show or link to in the log. You can delete or open previously inserted files.

Possible file types:

- pdf
- doc; docx
- xls; xlsx
- txt
- jpg

"Attachment 1 ... 5" area

Field/button	Explanations/operating instructions
File	-
"Select file" button	Click this button to select a file as an attachment.
"Remove file" button	Click this button to delete a previously added file.
"Show" button	Click this button to show a previously added file.
"Heading"	Enter a name for the document.

"Comments" tab

Purpose

You can enter additional comments in this tab.

Comment types

Area	Explanations/operating instructions
Wiring error	Enter a comment for this comment type.
Inappropriate measuring location	
Device error	
Comment on error	

9.3.7.2 Menu bar

Structure

Below, you will find an overview of the calibration log menus.

Menu	Submenu
File	• Log archive (Page 214)
	• Save (Page 214)
	• Print (Page 214)
	• Close (Page 214)
Options	• Log settings (Page 214)
Help	• Help (Page 215)
	• About... (Page 215)

9.3.7.3 Toolbar

The toolbar is located below the menu bar and contains several buttons. You can use the buttons to execute frequently used menu commands without having to open the menu.

Icons

Meanings of the icons used:

Icon	Menu command	Description
	Save (Page 214)	Saves the current log as a PDF file.
	Print (Page 214)	Prints the current view. Opens the "Print" dialog box. Select a printer that is available on the computer.

Icon	Menu command	Description
	Log settings (Page 214)	Opens the "Log settings" dialog box. You can adapt the log according to your requirements and preferences in this dialog box.
	Help (Page 215)	The SIMATIC PDM help opens.

9.3.8 Change log



The change log records which actions have been performed with SIMATIC PDM on objects of the plant.

Properties

- The change log is part of the associated SIMATIC project.
- The change log is a circular log (first in, first out).
- Some boxes of the change log are created automatically. Information is entered in the language preset in the SIMATIC project.

Note

SIMATIC PDM Client

Archived change logs cannot be opened on the SIMATIC PDM Web client.

Requirements for using the "Change Log" function

You need the "SIMATIC PDM Extended" license key to use the "Change log" function.

Entries in the change log

The "SIMATIC PDM Change Log" dialog window displays actions which have been performed in the project or on individual objects (devices). The displayed actions depend on the object displayed in SIMATIC PDM.
You can limit the displayed information by setting the filter. The "Action" drop-down list of the filter shows the actions that can be displayed.

Note

The following actions are NOT recorded in the change log:

- Actions that were triggered from the EDD
- Operator actions that were performed in the online context

It comprises the following entries:

Column	Meaning
Object identification	Database identification of the object (device or network) for which a change was made
Object name	Name of the object (device or network) for which a change was made
Action	Indicates which action was executed
Time	Time set on the computer when the action was carried out
Description	Description of action
Details	Details of action
Comment	Comment which a user entered before applying a change. Prerequisite for an entry: In the SIMATIC PDM settings, the "Show entry dialog for change log comments" check box on the "General" tab must be selected.
User name	Logon name of the user who performed the change
Computer name	Name of the computer from which the change was made
Object path	Name of a device with the path where the device can be found

9.3.8.1 Menus and dialog boxes

File menu

Add entry

Adds a manual entry to the change log.

Archive

Archives the entries depending on the set date.

Load archive

Loads an archived change log.

This function is not available on SIMATIC PDM Web client.

Print

Prints the currently displayed view.

Close

Closes the change log or LifeList.

View menu

Filter

Reduces the information displayed in the change log.

Find

Finds entries in the change log after input of a search term.

"Find" dialog box

Procedure

1. Select the menu command **View > Find**.
   The "Find" dialog box opens.
2. Enter the string you are looking for.
3. Click "Find next".

Settings in the "Find" dialog box

- **Entry field**
  You can enter any string. You can search for this string.
- **"Find next" button**
  The system searches through the displayed device list. The displayed change log is searched and the found entry selected.
  The next entry found is selected when you press the button again. The search starts all over again at the end of the list.
  A message will inform you if no matching entry is found.
- **"Close" button**
  Closes the dialog.

Show all objects

Toggles the view between all objects and the object for which the change log was called.

Help menu

Help

Opens the help for SIMATIC PDM.

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

Info

Opens the information about the version and the copyright details of SIMATIC PDM.

9.3.8.2 Menu bar

Structure

Below, you will find an overview of the Change log menus.

Menu	Submenu
File	• Add entry (Page 221)
	• Archive (Page 221)
	• Load archive (Page 221)
	• Print (Page 222)
	• Close (Page 222)
View	• Filter (Page 222)
	• Find (Page 222)
	• Show all objects (Page 222)
Help	• Help (Page 223)
	• Info (Page 223)

9.3.8.3 Toolbar

The toolbar is located below the menu bar and contains several buttons. You can use the buttons to execute frequently used menu commands without having to open the menu.

Icons

Meanings of the icons used:

Icon	Menu command	Description
	Add entry (Page 221)	Adds a manual entry to the change log.
	Print (Page 222)	Prints the current view. Opens the "Print" dialog box. Select a printer that is available on the computer.
	Filter (Page 222)	Filters the displayed change log. Opens the "Filter" dialog box. Enter a character string and specify the filter options.
	Find (Page 222)	Searches the displayed change log. Opens the "Find" dialog box. Enter a character string and specify the search options.
	Show all objects (Page 222)	Toggles the view between all objects and the view from which the change log was called.
	Help (Page 223)	The SIMATIC PDM help opens.

9.3.9 Set device checked



The "Device checked" attribute is an independent bit memory.

An activation stamp is set at the time when the attribute is activated. This time stamp is deleted at the time of deactivation.

There are no special access restrictions for setting the attribute. The attribute is usually set by the service technician or the project administrator.

Function of the "Device checked" attribute

This attribute does not influence the mode of operation of the PDM. None of the internal PDM functions depend on this attribute or are influenced by it.

The user defines the exact meaning of this attribute.

Devices with the set attribute can be queried, displayed and exported with the appropriate filter setting using the maintenance station.

Procedure

1. There are three different options to set or reset the attribute:
   - Set the attribute in the PDM device properties.
   - Set the attribute with the button in the toolbar.
   - Set the attribute in the device menu.

   In the plant view, the activation stamp is displayed in the "Device checked" column.
   As soon as the attribute is changed (activated/deactivated), an entry is made in the PDM Change Log.

9.3.10 Check configuration



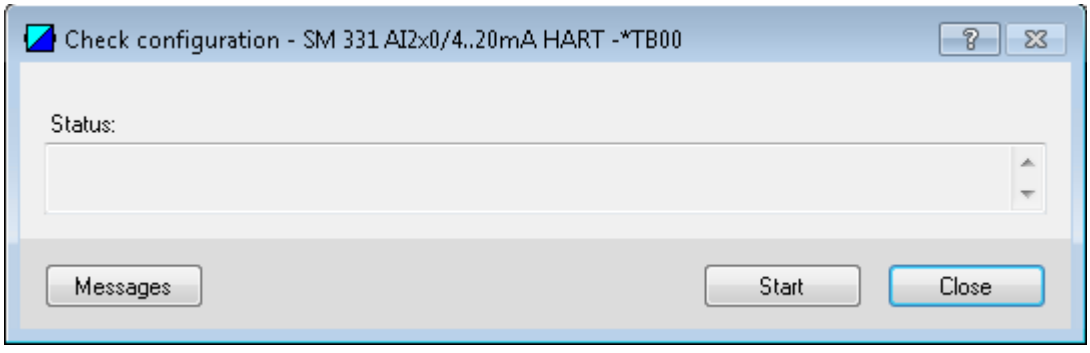
You can use the "Check configuration" function for the device description connected to a PDM object. This function checks whether the device description conforms to the EDD configuration rules for SIMATIC PDM.

Properties

- The check for device descriptions includes all the attributes of the associated object.
- If inconsistencies are identified, SIMATIC PDM enters a description of the current state in the log for the "Check configuration" function.

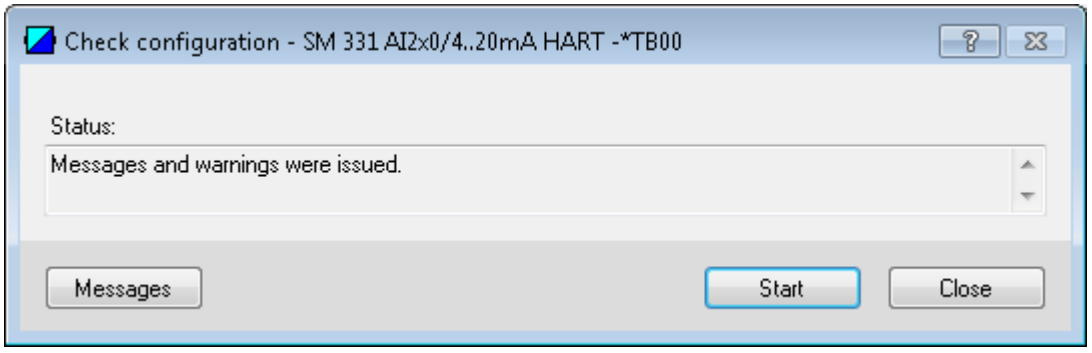
Procedure

1. Select an object (device) in the tree of the parameter view.
2. Select the **Device > Check configuration** menu command.
   The following dialog is opened:

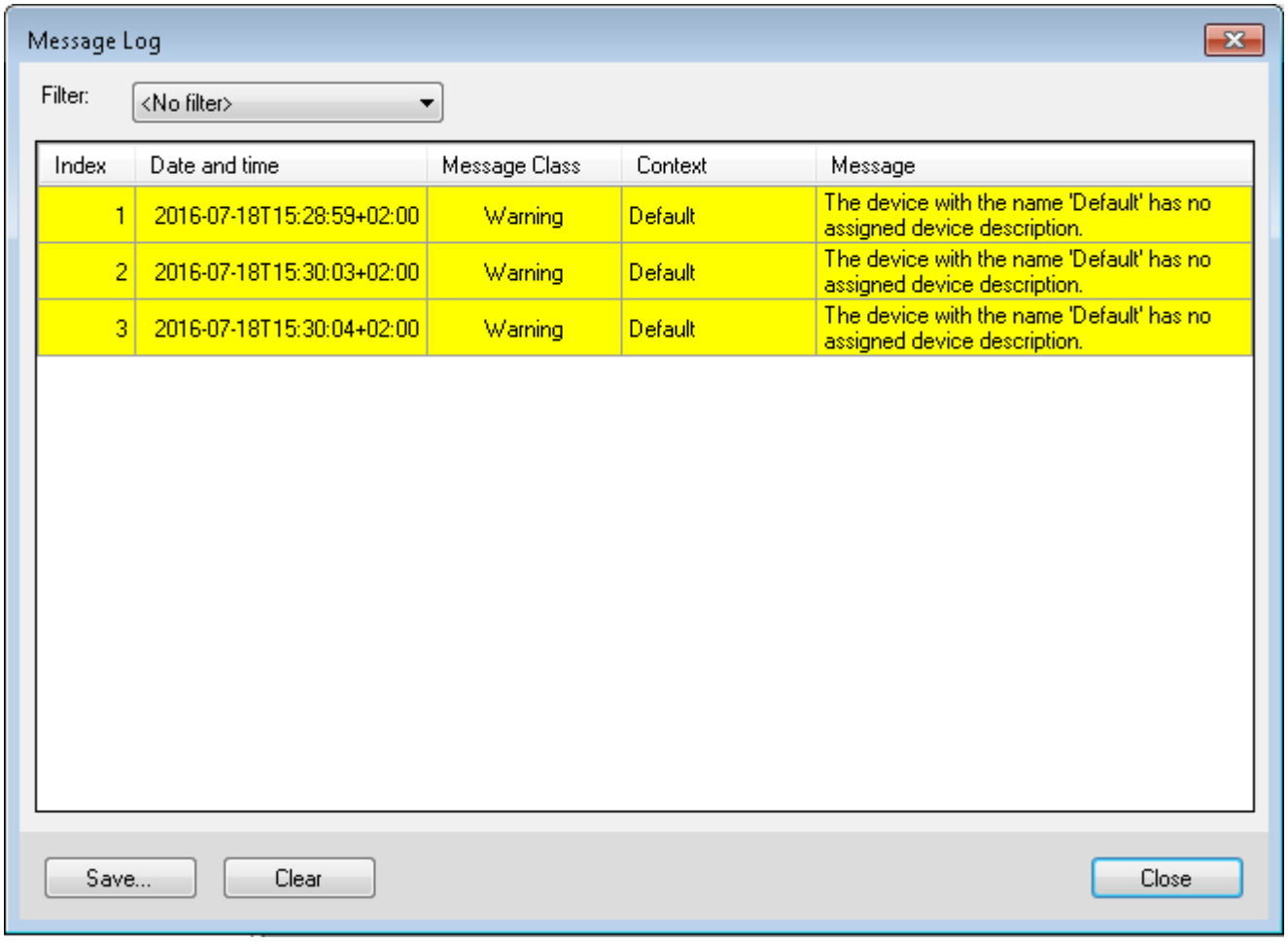


3. Click "Start".

4. You will see a message as soon when the check is completed.
   - If the device description conforms to the EDD configuration rules for SIMATIC PDM, the result indicates that the device is configured correctly.
   - When the device description is configured incorrectly, the message "Messages and warnings were issued" is displayed.



5. To display the message log, click "Messages".
   The message log opens.



6. Click the "Save..." button to save the message log.

9.3.11 Templates...



Some manufacturers offer templates in the device descriptions (EDD) .

You can apply these templates to other devices.

When parameters are configured in a template, you can transfer a plant-specific configuration to other devices by applying the template.

Properties

If templates are integrated into a device description, these templates are available for integrating device descriptions in SIMATIC PDM.

If parameters of a device contained in a template are changed, the template of the device is changed as well.

Requirement

A device is selected in the parameter view.

Use templates

1. Select the menu command **Device** > **Templates...**.
   The list of all defined templates included in the device description of the currently selected device is displayed. The title of the displayed templates are read from the "Label" attribute of the template.
2. Click a template.
   A table with the following columns opens:
   - Parameter
   - Value
   - Unit
   - Status
3. If you change a parameter, it will be marked with the following symbol in the "Status" column:

   
4. To save the device-specific changes, click "OK".

9.4 "View" menu

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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, device-specific functions are grayed out in the second window and can only be accessed in the window that was opened first.

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.

9.4.1 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 80)".

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 274)" tab.

9.4.2 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
- HART modem network
- FF network

9.4.3 Charts and trends (depends on device)

Note

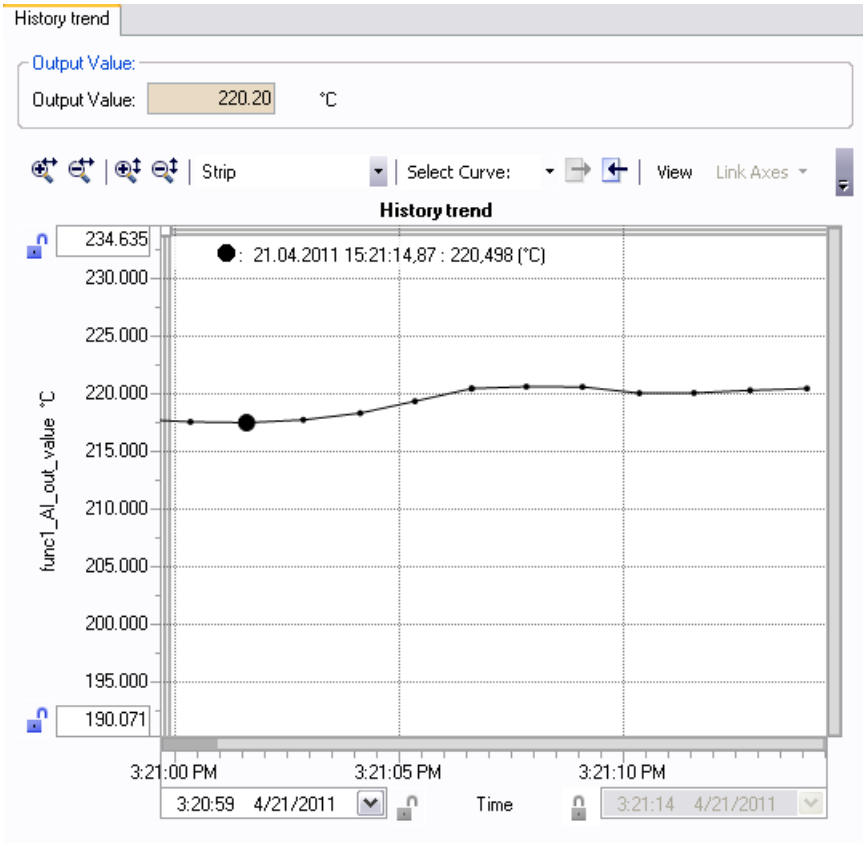
History trends can be displayed in SIMATIC PDM if they are provided by the manufacturer of the device description.

Additional information

- Section "Trend chart (Page 165)"
- Section "Work with trends (Page 172)"
- Section "Editing trends (Page 173)"
- Section "Icons and buttons (Page 169)"

Example

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



9.4.3.1 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.

Note

If the color of the value to be displayed changes from orange to yellow, the parameter could not be read within the monitoring time.

Additional information

- Section "Trend chart (Page 165)"
- Section "Tachometer chart (Page 168)"
- Section "Bar chart (Page 167)"
- Section "Icons and buttons (Page 169)"
- Section "Work with trends (Page 172)"
- Section "Editing trends (Page 173)"

9.5 "Diagnostics" menu

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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, device-specific functions are grayed out in the second window and can only be accessed in the window that was opened first.

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.

9.5.1 Update diagnostics



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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu item is grayed out in the second window and can only be accessed in the window that was opened first.

See also

"Update diagnostics - ..." dialog box (Page 232)

9.5.1.1 "Update diagnostics - ..." dialog box

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

"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/operating 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 collapsed 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 based on the option selected 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

- During the process, 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 message log shows errors and warnings or outputs from the EDD.

9.6 "Options" menu (depends on device)

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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, device-specific functions are grayed out in the second window and can only be accessed in the window that was opened first.

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.

9.7 "Help" menu

9.7.1 Contents

This menu command displays the Help on SIMATIC PDM.

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

9.7.2 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.

9.7.3 Info

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

9.7.4 Find

The displayed parameter list is scanned.

You may enter any string. You can run the search for this string.

9.7.5 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 "Inserting plant-specific documents for process mode (Page 126)"
- Section ""Document Manager" tab (Page 212)"

Menus and dialog boxes for SIMATIC PDM in HW Config

10

Installing SIMATIC PDM makes additional functions available in the **Edit > SIMATIC PDM** menu of HW Config.

See also

Exporting (Page 244)

Importing (Page 245)

Download to device (Page 245)

Upload to PG/PC (Page 246)

Update diagnostics (Page 247)

Start LifeList (Page 247)

Device selection (Reassign) (Page 247)

Show change log (Page 249)

Synchronizing with HW Config (Page 250)

Menus and dialog boxes for SIMATIC PDM in the SIMATIC Manager

11

11.1 "Edit" menu

11.1.1 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 menu command **Edit > Open object.**
- **SIMATIC PDM functions**
  The following functions are available in the **Edit > SIMATIC PDM** menu:
  - Exporting (Page 187)
  - Importing (Page 191)
  - Download to device (Page 198)
  - Upload to PG/PC (Page 200)
  - Update diagnostics (Page 232)
  - Start LifeList (Page 247)
  - Device selection (Reassign) (Page 247)
  - Show change log (Page 249)

11.1.2 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:

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

11.1.2.1 "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 271)".

Field	Explanations/operating 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*	
Text 3*	
Author	Displays the name of the author.
Date created	Displays the date on which the PDM object was created.
Last change	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).
Priority*	Select an object marking here (nothing, important, SIF). This value is then displayed in a "Priority" column in the plant view.
Device checked	Shows the time stamp for when the attribute "Device checked (Page 224)" was activated.
Project-specific write protection	Shows the time stamp for when the attribute "Project-specific write protection (Page 265)" was activated.

* Entry can be changed.

11.1.2.2 "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/operating instructions
Device type	Shows the device type as specified in the "Device Selection" dialog box.
Manufacturer	Shows the manufacturer.
Order number	Shows the order number of the device.
Catalog path	Shows the catalog path.
Device DDL	Shows the device description file assigned to the object.
EDD revision	Shows the version of the device description file (hexadecimal format).
Device revision	Shows the hardware version of the device (hexadecimal format).

11.1.2.3 "Diagnostics" tab

Purpose

This tab shows information about the communication of the device. The icon shown for the device depends on the information available. If communication is disrupted, the device status and the date of the last test are empty.

Field	Explanations/operating instructions
Communication status	Shows whether the communication is good or faulty.
Last communication	Shows the date on which the last communication with the device took place.
Message text	Shows detailed information about the communication as well as communication errors or connection problems.
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.

11.1.2.4 "Communication" tab

Purpose

In this tab, you can display the address of a device (short address and long address for HART devices). If the device was configured in the process devices network view, you can change the address.

Field	Explanations/operating instructions
Short address* (default value: 0)	The short address is displayed here for HART devices.
Long address* (default value: 0x0000000000)	For HART devices, the long address is displayed here. As soon as the device is known, the long address is stored.
DP master address* (default value: 0)	The address of the hierarchical master on the bus. This parameter is optional – this value is ignored when configuring via HW Config.
IP address (default value: 0.0.0.0)	The address that is based on the Internet protocol.

* Entry can be changed.

Table 11-1 "Properties" area

Field	Explanations/operating instructions
Master type (default value: Secondary master)	The HART modem uses the serial port of a PC and a HART modem or HART interface connected to it to communicate with the connected HART devices. It can be both primary and secondary master.
"Ignore secondary master" check box	If there is no secondary master, the time behavior can be optimized and devices can be addressed faster by enabling this option.
"Prefer 'Long address'" check box	Once a device is known, communication with it is performed only via the long address. In this case, multiple devices on the same HART modem can have the short address 0. To make a device known with short address, no other devices can be connected to the HART modem.
MODBUS communication (default value: Serial)	Serial: COM interface must be suitably set for the device (interface, baud rate, etc.). IrDA: USB infrared adapter required. The device (1 at a time) then communicates via this adapter. (Multiple USB IR adapters are not supported.)
Response time* (default value: 1000 ms)	This is the time waited to obtain a response from a MODBUS device. If this value is too low, it is possible that no connection to the device will be made. If it is too high, the communication can be extremely slow.
Subnet ID* (default value: 0x0000 0x0000)	The S7 subnet ID of the network. This parameter is optional – this value is ignored when configuring via HW Config.

Field	Explanations/operating instructions
PROFIBUS CP slot* (default value: 2)	The slot address of the PROFIBUS interface. This parameter is optional – this value is ignored when configuring via HW Config.
Rack no. (default value: 0)	Number of the rack. The rack no. can only be 0 or 1.

* Entry can be changed.

NOTICE
HART device replacement For a device replacement, this long address must be set to 0 so that a replacement device can be newly identified. The replacement device must be the only device on the HART modem.

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

Table 11-2 "Redundancy" area

Field	Explanations/operating instructions
"Redundancy activated" check box	There is a redundant partner device for this device.
Corresponding slave	The redundant partner device can be found via this field.
Select object*	A new object can be added with this button.

* Entry can be changed.

A network adapter can be selected for ETHERNET or PROFIBUS devices.

Table 11-3 "Assign assigned network and network adapter" area

Field	Explanations/operating instructions
Assigned network	The selected interface is displayed in this field.
Assign network to interface*	A network can be added to the selected interface with this button.
"Use 'PG/PC Interface' settings" check box*	This device uses an PG/PC interface.
"Use network adapter" check box*	This device uses a network adapter.
Network adapter*	A network adapter can be selected with this field.

* Entry can be changed.

See also

Connecting field devices to a redundant bus system (Page 122)

"Select object" dialog box (Page 123)

11.1.2.5 "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 are 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**. Select the required document from the submenu.

11.1.3 SIMATIC PDM

11.1.3.1 Synchronize

Executes synchronization for changes to the HART server in the multiplexer network.

The synchronization function takes the following into consideration:

- New hierarchy and devices are inserted.
- Hierarchies and devices that no longer exist are removed.
- Renamed devices are also renamed in PDM.

11.1.3.2 Exporting



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.

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

See also

"Export - ..." dialog box (Page 188)

11.1.3.3 Importing



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.

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

See also

"Import - ..." dialog box (Page 192)

11.1.3.4 Download to device



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.

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

Errors and messages

During the loading, 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.

Suppressing message dialogs

You can suppress message dialogs during the loading. Select the "Execute 'Load' without info dialogs" check box. You can find additional information using the **Options > SIMATIC PDM > Settings >** The "Load" tab (Page 275) menu command.

Additional information

You can find information on loading FF devices in the *PCS 7 FOUNDATION Fieldbus* commissioning manual

See also

"Download to device - ..." dialog box (Page 199)

11.1.3.5 Upload to PG/PC



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

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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

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 loading, 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.

Suppressing message dialogs

You can suppress message dialogs during the loading. Select the "Execute 'Load' without info dialogs" check box. You can find additional information using the **Options > SIMATIC PDM > Settings >** The "Load" tab (Page 275) menu command.

Additional information

You can find information on loading FF devices in the *PCS 7 FOUNDATION Fieldbus* commissioning manual

See also

"Upload to PG/PC - ..." dialog box (Page 201)

11.1.3.6 Update diagnostics



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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu item is grayed out in the second window and can only be accessed in the window that was opened first.

See also

"Update diagnostics - ..." dialog box (Page 232)

11.1.3.7 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
- HART modem network
- FF network

11.1.3.8 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 descriptions are 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 downloaded to the device to be integrated.
- **Device descriptions are incompatible**
  The device to be replaced **cannot** be operated with the device description of the device to be integrated, e.g. a device is replaced with one from a different manufacturer.
  The device to be replaced should be removed from the configuration when it is replaced with an incompatible device. Reconfigure the device.
  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, the tree structure includes a preselection with paths designed for the device.
  Select one of these paths.
- If device identification is not unique, select the required device in the result list and click the "Device identification" button again.

Assigning the device description manually

Select the required device description from the "Device catalog" list, based on the following data:

- Manufacturer
- Device type
- Device revision and DD 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

Integrating device descriptions (Page 54)

11.1.3.9 Show change log



The change log records which actions have been performed with SIMATIC PDM on objects of the plant.

Properties

- The change log is part of the associated SIMATIC project.
- The change log is a circular log (first in, first out).
- Some boxes of the change log are created automatically. Information is entered in the language preset in the SIMATIC project.

Note

SIMATIC PDM Client

Archived change logs cannot be opened on the SIMATIC PDM Web client.

Requirements for using the "Change Log" function

You need the "SIMATIC PDM Extended" license key to use the "Change log" function.

Entries in the change log

The "SIMATIC PDM Change Log" dialog window displays actions which have been performed in the project or on individual objects (devices). The displayed actions depend on the object displayed in SIMATIC PDM.
You can limit the displayed information by setting the filter. The "Action" drop-down list of the filter shows the actions that can be displayed.

Note

The following actions are NOT recorded in the change log:

- Actions that were triggered from the EDD
- Operator actions that were performed in the online context

It comprises the following entries:

Column	Meaning
Object identification	Database identification of the object (device or network) for which a change was made
Object name	Name of the object (device or network) for which a change was made
Action	Indicates which action was executed
Time	Time set on the computer when the action was carried out
Description	Description of action
Details	Details of action
Comment	Comment which a user entered before applying a change. Prerequisite for an entry: In the SIMATIC PDM settings, the "Show entry dialog for change log comments" check box on the "General" tab must be selected.
User name	Logon name of the user who performed the change
Computer name	Name of the computer from which the change was made
Object path	Name of a device with the path where the device can be found

11.1.3.10 Synchronizing with HW Config

Starts the synchronization of PDM objects with HW Config objects.

You can select the "Synchronize with HW Config" menu command in process device plant view or the process device network view. This menu command starts the synchronization of PDM objects with HW Config objects.
The message log shows any warnings, errors and information relating to the synchronization or synchronization conflicts.

If SIMATIC PDM is installed, but there is no valid license, the following "message" is displayed:

You are attempting to start configuration/engineering for SIMATIC PDM with insufficient licensing. If you answer Yes, synchronization between HW Config and the SIMATIC PDM database will be necessary after sufficient licensing. Do you want to continue?

If you answer with "yes", you allow all HW Config actions during this session regardless of SIMATIC PDM licenses.

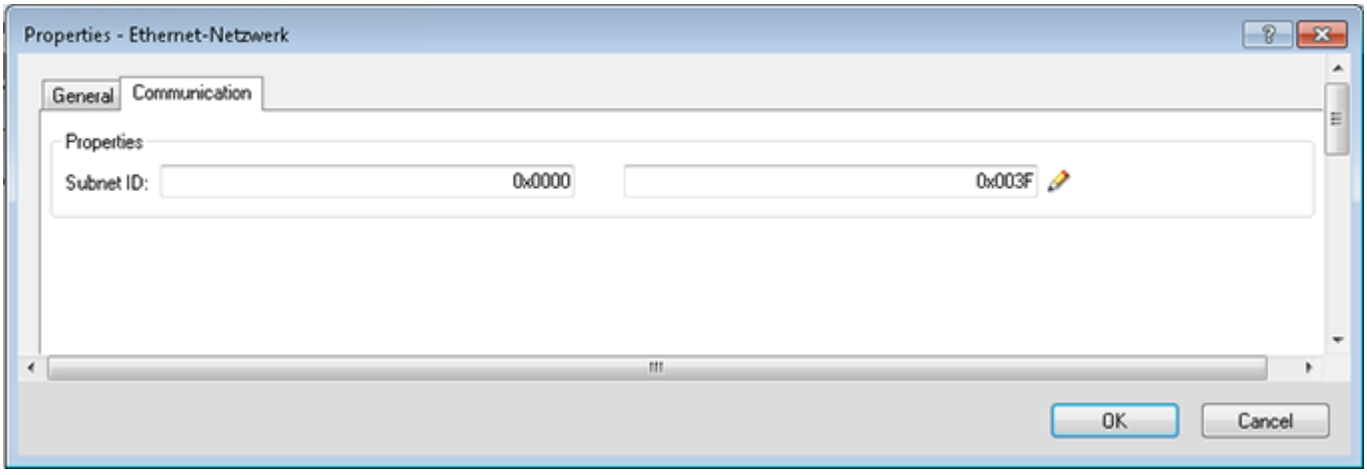
If you continue with "No", the license check of SIMATIC PDM becomes active for this HW Config session.

11.1.3.11 Import from HWC station

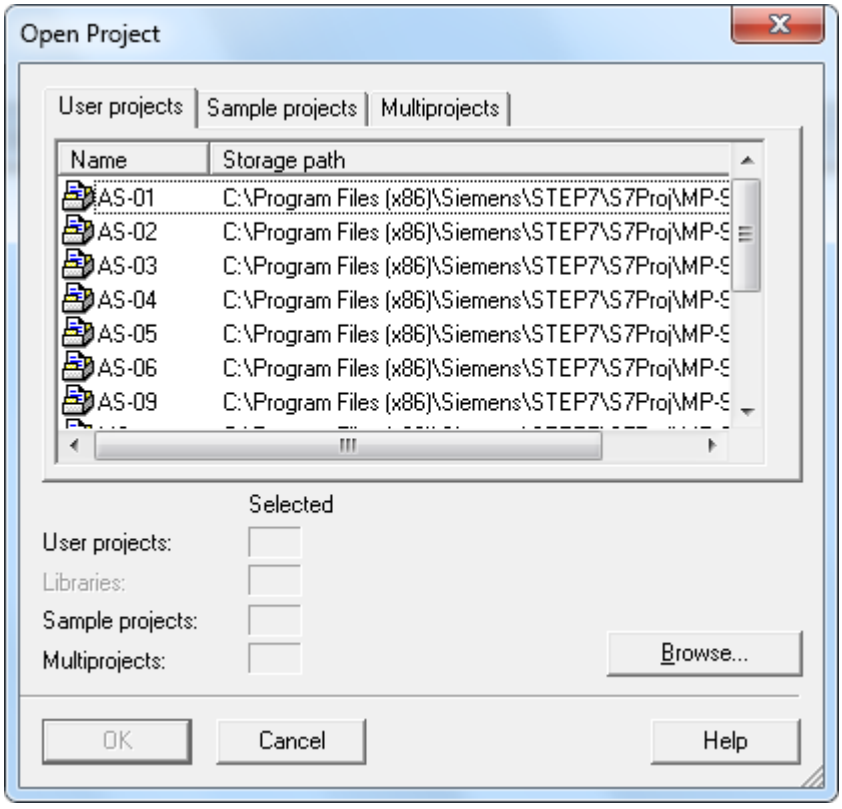
The "Import HWC Station" function allows you to create or expand a PDM stand-alone project with the substructures of an existing integrated project (with security for the configuration of the network properties).

Procedure

1. Open the process device network view.
2. Create an communication network.
3. Select the created communication network.
4. Under **Properties > Communication** in the shortcut menu, enter the subnet ID that is used for the plant bus in the project from which you want to import the "HWC station".



5. Start the function "Import from HWC station".
   A dialog opens for selecting the project from which you want to import the stations.



6. Select the project or multiproject whose substructure you want to apply.
   A dialog opens that shows all automation stations that are connected to the PROFINET subnet ID.
   Meaning of the columns in the "Import from HWC Station" dialog:

Column	Meaning
Station name	Name of the HWC station or the name of the PDM object.
LID	Location identifier denotes the installation position of a device or project
Address	Shows the address of the device or station. If this involves a network, this column shows the subnet ID.
Action	You can select the action to create, ignore or update a project in this column. After the import, this column shows the action for each device.
Station type	Type of station in the merging structure, which is a component path.

Note

You can select an action (Ignore, Create or Update a station) for each station. Once an action is selected, the dialog shows a tree view. Now you can select which parts of the project should be updated or created. By default, all devices that need to be created are selected, except GSDML/GSD devices.

Note that the "Update a station" action does not perform all steps automatically (e.g. nothing is deleted).

7. Select an automation station (or part of the substructure) and click "Start".
   The import starts.
   The corresponding substructures are created below the communication network.

Status symbols in the "Import from HWC station" dialog

Table 11-4 Meanings of the symbols in front of each object:

Symbol	Meaning
	Object exists only in the source project and must be created.
	Object exists in source and target and can be updated.
	Object exists only in the target project and can be deleted.

Table 11-5 Meaning of the symbols after the import:

Symbol	Meaning
	Object is being processed.
	Object successfully created, updated or deleted.
	Object is ignored because it was not selected.

Check boxes in the "Import from HWC station" dialog

Table 11-6 Meaning of the symbols after the import:

Symbol	Meaning
Enabled	This object is being processed.
Cleared	This object is not processed and the subobjects are also not processed.
Not selected	This object is not processed, but some of the subobjects are processed.

11.2 "Insert" menu

11.2.1 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
- Interface
- 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.

Note

"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 networks under the "Networks" folder:

- Ethernet network
- HART modem network
- HART server (multiplexer network)
- MODBUS network
- PROFIBUS DP network.
- PROFINET network

Selecting the menu command opens the selection dialog ("Insert object - <...>" dialog box).

You can use the menu command to create the following objects:

- Only when downloading the first time:
  The "PC station" object (PDM computer, computer on which PDM is installed)
- The communications network

Password protection

If there is password protection for communication with a PROFINET network, follow these steps:

1. In the shortcut menu, select the menu command **Update connection data**.
   The dialog box "The station is password protected" appears.
2. Enter the password in the input box.
3. Click "OK".

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.

Interface (process device network view)

You can add an interface to a PC object in the process device network view.

Select the PC object and then the menu command **Insert New Object > Interface** in the shortcut menu.

SIMATIC PDM offers the following three interface types:

- DP interface (PROFIBUS DP interface via CP module)
  You can make additional network settings (Page 210) for a PROFIBUS DP interface.
- COM interface (serial interface via COM1, COM2)
- ETHERNET interface
  You can make additional network settings (Page 210) for an ETHERNET interface.

Network	Required
PROFIBUS DP network	DP interface
HART modem network	COM interface
MODBUS network	COM interface
S7 DSGW network	Ethernet interface
HART server (multiplexer network)	Installation of the HCF OPC server

See also

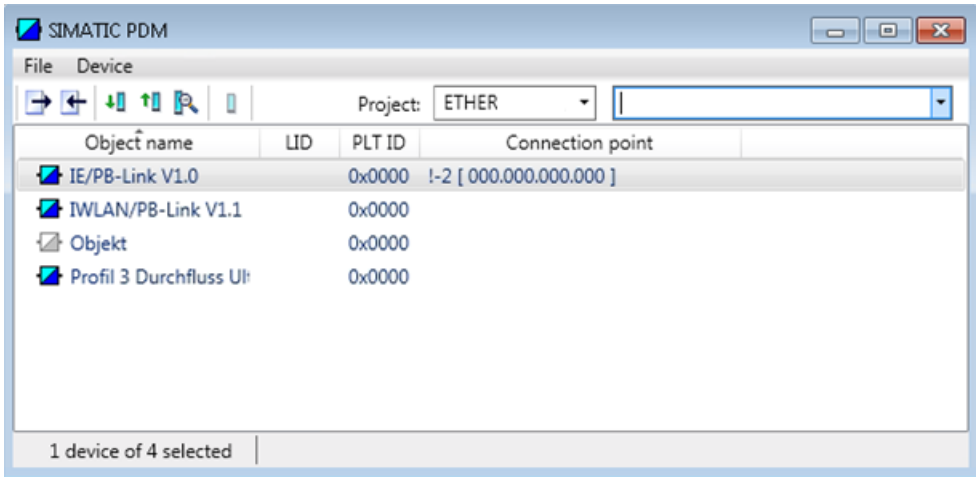
"Communication" tab (Page 210)

11.3 "View" menu

11.3.1 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.



Opening and adapting the process devices plant view

Opening the process devices plant view (Page 72)

Adapting the process device plant view (Page 73)

See also

"Settings" for the SIMATIC project (Page 89)

PDM parameter view (Page 265)

Toolbar in the "Process device plant view" dialog box (Page 259)

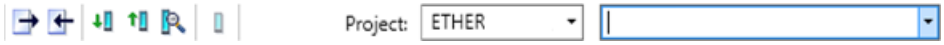
Messages (Page 72)

Menus and dialog boxes in the "Process device plant view" dialog box (Page 259)

11.3.2 Menus and dialog boxes in the "Process device plant view" dialog box

11.3.2.1 Toolbar in the "Process device plant view" dialog box

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 and functions

The objects are linked to the following menu commands:

Objects in the toolbar	Menu command
	Exporting (Page 187)
	Importing (Page 191)
	Download to device (Page 198)
	Upload to PG/PC (Page 200)
	Update diagnostics (Page 232)
	AUTOHOTSPOT
"Project" selection box	Select the project. You can find more information on this in the section ""Project" selection box (Page 263)".
Input box (for search strings)	This box is an input box for search strings: Enter a search string. You can find more information on this in the section "Find (Page 264)".

11.3.2.2 "File" menu

New object

Requirement	A project is selected.
Procedure	Click on the menu command **File > New Object**. The selection for configurable properties appears. You can find more information on this in the section "Inserting an object (Page 255)".

Note

Configuring user diagnostics with the maintenance station

The newly created objects have no communication assignment. This subsequent communication assignment is not possible.

This configuration allows the user diagnostics with the maintenance station.

Copy

Copy the selected object to the clipboard.

Note

You can only copy objects that have been configured in the process device plant view (objects with no communication assignment).

Devices that have been configured in the process device network view or in HW Config cannot be copied.

Paste

Insert the object from the clipboard at the selected point.

Note

You can only insert objects that have been copied in the process device plant view (objects with no communication assignment).

Requirement:

A project is selected in the "Project" selection box. No objects can be inserted into the multiproject.

Delete

Deletes the selected object from the process device plant view.

Note

You can only delete objects that have been configured in the process device plant view (objects with no communication assignment).

Devices that have been configured in the process device network view or in HW Config cannot be deleted.

Rename object

The function for renaming objects is similar to that in the Windows Explorer.

11.3.2.3 "Device" menu

Exporting



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.

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

See also

"Export - ..." dialog box (Page 188)

Importing



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.

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

See also

"Import - ..." dialog box (Page 192)

Download to device



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.

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

Errors and messages

During the loading, 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.

Suppressing message dialogs

You can suppress message dialogs during the loading. Select the "Execute 'Load' without info dialogs" check box. You can find additional information using the **Options > SIMATIC PDM > Settings >** The "Load" tab (Page 275) menu command.

Additional information

You can find information on loading FF devices in the *PCS 7 FOUNDATION Fieldbus* commissioning manual

See also

"Download to device - ..." dialog box (Page 199)

Upload to PG/PC



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

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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu command is grayed out in the second window and can only be accessed in the window that was opened first.

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 loading, 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.

Suppressing message dialogs

You can suppress message dialogs during the loading. Select the "Execute 'Load' without info dialogs" check box. You can find additional information using the **Options > SIMATIC PDM > Settings >** The "Load" tab (Page 275) menu command.

Additional information

You can find information on loading FF devices in the *PCS 7 FOUNDATION Fieldbus* commissioning manual

See also

"Upload to PG/PC - ..." dialog box (Page 201)

Update diagnostics



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

If a device is opened twice, for example, by opening the higher-level network and by opening it directly, this menu item is grayed out in the second window and can only be accessed in the window that was opened first.

See also

"Update diagnostics - ..." dialog box (Page 232)

Device Selection (Reassign)

This function is used to manually assign a device type and thus an EDD for the selected object.

See also

Creating your own device library using the project filter (Page 56)

Creating your own device library from a collection of device descriptions (Page 57)

11.3.2.4 Functions

"Project" selection box

The "Project" selection box organizes the data displayed in the device list:

- Selection of an individual project:
  The list shows the devices and data of the project.
- Select a multiproject:
  The list shows the devices and data from the entire multiproject.

Click on the "Project" selection box. The "Project" selection box displays all available user projects. Select individual projects or select "All" to see all the devices included in the selected projects.

Find

Enter the "string" (word) or partial string in the input box to be used for the search.

- **Limit search to a single column of the table**
  Click on the header in the table. Select the check box for the columns in which for the term to be searched.
- **Find multiple strings**
  Spaces enable you to filter according to multiple terms in the table columns that are selected for the search. No wildcards are accepted.
  Example:
  "SITRANS 00" to find the strings "SITRANS" and "00"
- **Change search**
  Changes the search string.
- **Delete search string**
  If you do not want to limit the search, delete the entries in the input box.

Sorting columns

- **Sort**
  Left-click in table header of a column.
  Sorts the table based on this column.
  A left-click on a sorted column reverses the sort order in the table based on the clicked column.
- **Limit search to a single column of the table**
  Click in the table. Open the shortcut menu and select the check box for the columns in which you want to search for the term.
- **Change the order of the columns of the table**
  Click on the header in the table. Select the column with the header. Hold down the left button and drag the column to the desired position within the table.

Hardware configuration

When an object has been created using HW Config, the "Hardware configuration" application can be opened.
HW Config analyzes the current configuration and, if possible, highlights the corresponding object.

PDM parameter view

You have the following options for opening SIMATIC PDM:

- Double-click on the object.
- Select an object
  - Press Enter.
  - CTRL + ALT + O
  - "Open object" shortcut menu

The parameter view of SIMATIC PDM opens.

Show change log

Opens the change log. (See also Show change log (Page 249)")

Specify project-specific write protection

The "Project-specific write protection" function prevents unintentional changes of field device parameters.

Note

This function is not an absolute write protection against parameter changes in the device. It only prevents unintentional changes by the user. Depending on the architecture of the DD devices, DD methods and functions can change the parameters.

An activation stamp is set at the time when the project-specific write protection is activated. This time stamp is deleted at the time of deactivation.

There are no special access restrictions for setting a project-specific write protection. The function is usually activated or deactivated for configured field devices by the project administrator.

Effects of the project-specific write protection

Activation of the project-specific write protection has an effect on the following functionalities:

- The "LoadToDevice" function in the device menu, the maintenance menu as well as in the online dialogs, all method buttons and the transfer button are locked or deactivated.
- In case of bulk operations, write-protected devices are omitted.
- Write orders from the device DD cannot be intercepted.
- Pure read operations, such as "LoadToPc", "Diagnostics" or device export as well as display of process data in measured value dialogs still work.

Procedure

1. Open the plant view.
2. Select the field devices for which you want to set project-specific write protection and those whose project-specific write protection you wish to revoke.
3. Open the shortcut menu with a right-click.
4. Select the menu item "Project-specific write protection".
   The check mark in front of the "Project-specific write protection" menu item either appears or disappears.
   The time stamp in the "Write protection" column either appears or disappears.
   The padlock symbol at the respective device symbol appears or disappears.
   As soon as write protection changes (activated/deactivated), an entry is made in the PDM change log.

11.3.3 Operation view

Core statement

The operation view indicates all operations initiated by you.

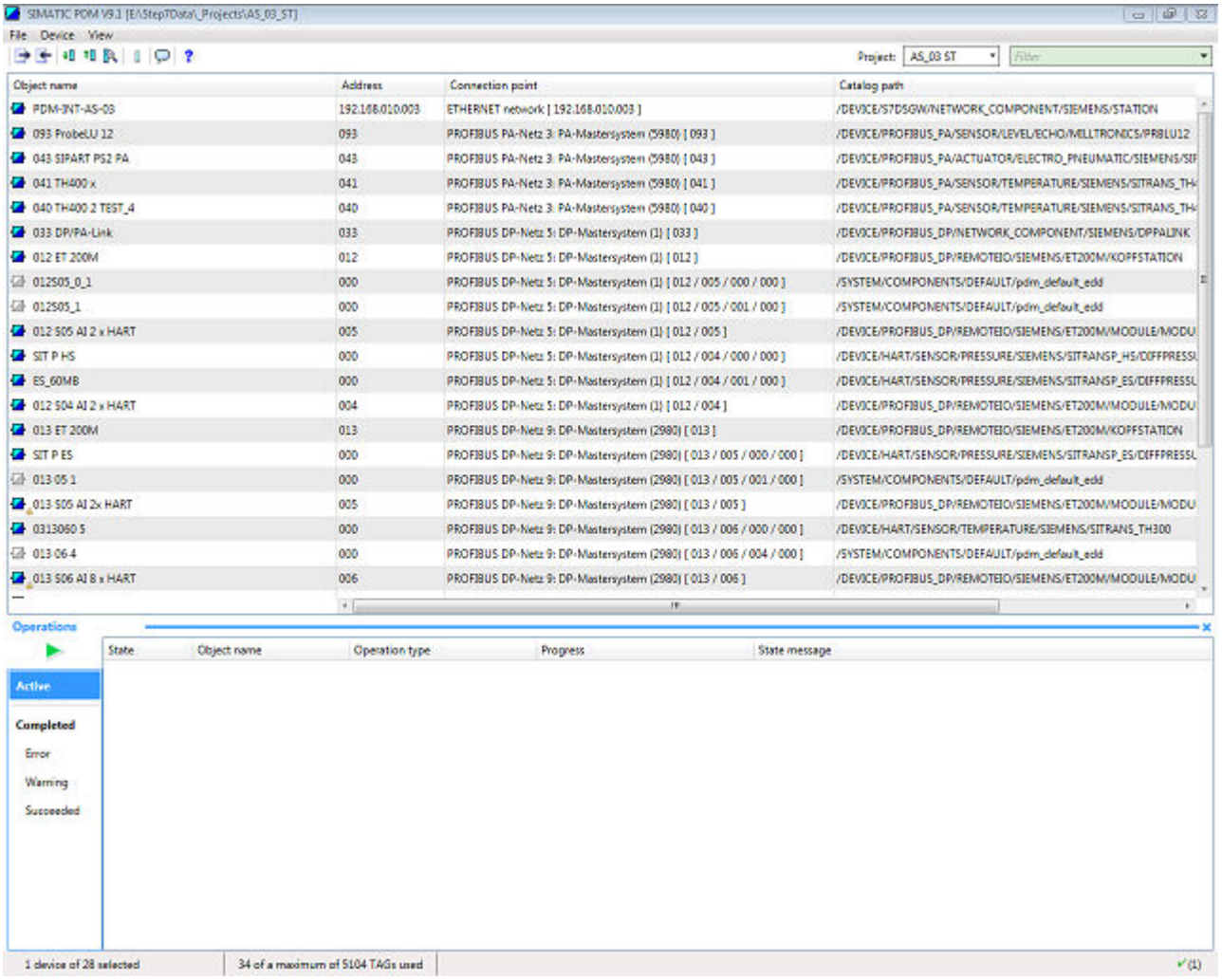
Opening the operation view

You open the operation view in one of two ways:

- Click "View > Operation View"
- Perform an operation

Structure

The operation view is located below the plant view and shows all operations initiated by you. You can use the dividing line in the upper area to change the size of the operation view. This setting is retained the next time the operation view is opened.



Closing the operation view

The upper area of the operation view contains the "X" button. Click this button to close the operation view. If you would like to close the operation view while operations are being executed, an error message to that effect appears.

Controlling the operation view

The operations of the operation view are controlled in the left area. The following two symbols are used for this.

Symbol	Description
	The operations are being executed.
	The operations have been paused.

Filtering the operation view

You filter the operations of the operation view in the left area. The following four filters are available:

Status	Description
Completed	All operations that are completed are displayed.
Error	All operations that were finished with an error are displayed.
Warning	All operations that were finished with a warning are displayed.
Successful	All operations that were finished successfully are displayed.

Status bar

The lower area contains the status bar of the operation view. The results of the operations are given in the status bar. The following three statuses are possible:

Symbol	Description
 (x)	"x" operations were successfully executed.
 (x)	"x" operations were finished with a warning.
 (x)	"x" operations were finished with an error.

Operation list

The area on the right displays the operation list. It shows information on the individual operations in a table.

Table column: Status

The following statuses exist:

Symbol	Status	Visible under
	The operation was successfully executed.	Completed, Successful
	Messages and warnings occurred during execution of an operation.	Completed, Warning
	The operation was not executed due to an error.	Completed, Error
	The operation is currently being processed elsewhere.	Completed, Error

Symbol	Status	Visible under
	The operation is waiting to be executed.	Active
	The operation was not executed.	Completed, Successful
	The operation is currently being executed.	Active

Table column: Object name

The name of the device, the diagnostic information, the status and the project-specific write protection are displayed.

Table column: Operation type

The following operation types are displayed:

Symbol	Operation type
	Export
	Import
	Download to device
	Upload to PG/PC
	Update diagnostics

Table column: Progress

A progress bar with percentage information appears while an operation is being executed.

Table column: Status message

Messages can occur while an operation is being executed.

Interactions while operations are being executed

It is impossible to completely prevent unwanted interactions from taking place. If this happens, the respective line in the table of the operation view is marked in orange and a dialog box appears. Operator control of the plant view and the associated operation view is then disabled until all dialogs have been closed.

Change log

If you have activated the "Show input dialog for comments in change log" option, a change log is displayed in the plant view for each operation that you have initiated. The number of devices selected is irrelevant.

Export

A dialog box appears for the export. The settings in the dialog apply to all selected devices. The following settings are available:

- Export directory
- HTML transformation file
- The information to be exported, e.g. device parameters, diagnostics, document manager

Import

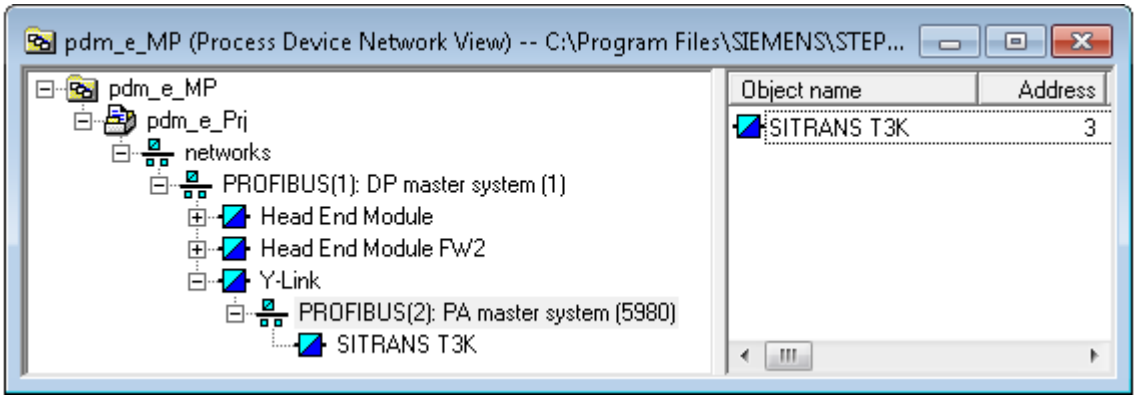
A dialog box appears for the import. The settings in the dialog apply to all selected devices. The following settings are available:

- Import file
- Identification data for the import
- Device parameters for the import

11.3.4 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 devices network view, for example, for end-to-end connections between a PC and a device in the factory.



Opening the process device network view

1. Select the **View > Process device network view** menu command in SIMATIC Manager. The process device network view opens.

See also

"Settings" for the SIMATIC project (Page 89)

11.4 "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

Make the project settings In SIMATIC Manager using the following menu command: **Options > Settings...**

Settings	Tab	Meaning
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 of 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 > Communication network**
  - **Process device network view > Networks > Communication 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 (Location identifier denotes the installation position of a device)	-	**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
Installation date	-	x	-	-	x
Hardware version	-	x	-	-	x
Software version	-	x	-	-	x
Article 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

*Process control ID generated internally by PDM for identification of an object for connections to the Asset Management System (PCS 7 Maintenance Station and PDM Maintenance Station).

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

	Process device plant view (multiproject)	Process device network view (multiproject)
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 273)

Menus and dialog boxes for SIMATIC PDM in the SIMATIC Manager (Page 239)

11.4.1 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 274)	Display of the device parameters
Communication	"Communication" tab (Page 274)	Settings for communication
Load procedures	The "Load" tab (Page 275)	Selection of information for load procedures
Device Integration Manager	"Device Integration Manager" tab (Page 276)	Settings for the Device Integration Manager
Maintenance project	"Maintenance Station" tab (Page 277)	Settings for the maintenance station project
PDM clients	"PDM clients" tab (Page 278)	Allow computers to access to the SIMATIC PDM Server through a browser
Change log	"Change Log" tab (Page 279)	Settings for the change log
Service	"Service" tab (Page 279)	Settings for expert mode of SIMATIC PDM

See also

"Settings" for the SIMATIC project (Page 89)

11.4.1.1 "General" tab

Purpose

You can set the display of the device parameters in this tab.

Area	Field	Explanations/operating instructions
Project	"Use message as long TAG for HART revision < V6" check box	If this check box is selected, the string stored in the "Message" parameter is sent as a "Long TAG" for HART devices with a HART revision prior to V6.
	Check box "Parameter view in table format"	If the check box is **selected**, the data are displayed in table format in the PDM parameter view. If the check box is **cleared** (default), the original formats from EDD, if the exist, are displayed.
	"Select type when device is inserted in HW Config" check box	If the check box is selected, the dialog for device type selection appears immediately when you insert a device in HW Config if the device cannot be assigned explicitly to a device type. If the check box is cleared, this dialog does not appear until the device is opened for the first time.
File paths	**HTML transformation file**	XSL file that contains the information for display in HTML format.
	Path for "Export" files	Storage path for files created with the "Export" function.
	Path for "Asset export" files	Storage path for "Asset export" files
	Path for "Document" files	Storage path for "Document Manager" files
	Path for "Message protocol" files	Storage path for "Message protocol" files
	Path for "Compare Log" files	Path for "Compare Log" files
	Path for "Calibration Log" files	Storage path for "Calibration Log" files
	Path for "Archive" files	Storage path for "Archive" files
	Path for "printed out" files	Storage path for "printed out" files

11.4.1.2 "Communication" tab

Purpose

The following communication settings can be made in this tab:

Field	Explanations/operating 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 selected, SIMATIC PDM performs an identity check automatically each time there is any online communication.

Field	Explanations/operating instructions
Device diagnostics	If the "Diagnostics update" check box is selected, SIMATIC PDM performs device diagnostics automatically each time there is any online communication.
HART communication	If the "SHC mode enabled" 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 interrupted: If communication with individual HART field devices is interrupted 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 identity check and device diagnostics. You can still use the "Update diagnostics (Page 247)" 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

11.4.1.3 The "Load" tab

On the "Load" 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 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 configuration flag after successfully loading a device. Each change in the configuration of a device sets the configuration flag.
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.

"Exclude passivated FF blocks" check box

If this check box is selected, passivated function blocks are ignored during download.

11.4.1.4 "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
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

Visible columns	Displayed information
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

* 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

Check box	Explanations/operating instructions
Semantic check	If this check box is selected, the Device Integration Manger checks the device description files for semantic errors during the integration process.

11.4.1.5 "Maintenance Station" tab

Purpose

In this dialog box, you specify the path to the project of a maintenance station for the use of a maintenance station.

Table 11-7 Maintenance project area

Field	Explanations/operating 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.
"Transfer maintenance alarm to MS station" check box	Select this check box if you want maintenance alarms that are detected by SIMATIC PDM to be sent to the maintenance station. This option must be enabled for integration into the PDM MS.

Table 11-8 "Client settings" area

Field	Explanations/operating instructions
"Automatic logoff of the session when there is no activity" check box	Select this check box if the SIMATIC PDM Server idle sessions should log off after a specified time. Enter the time to wait until logoff in the "Time" input box.
"Time" input box	You can specify the time after which idle sessions are to be logged off. **Requirement:** The "Automatic logoff portal view in case of inactivity" check box is selected.

Additional information

You can find information on working with the maintenance station in the configuration manual titled *Process Control System PCS 7 Operator Station*.

11.4.1.6 "PDM clients" tab

You can allow computers to access to the SIMATIC PDM Server through a browser in the "PDM clients" tab.

The number of computers is limited by the number of available PDM clients.

"License information" display area

Note

Insufficient licenses available

If there are not enough licenses, you need to release clients.

To release a client, clear the check box for the client that you want to release.

The "License Information" display area shows you the number of currently active PDM sessions via a browser and the number of licensed PDM clients.

Note

Multiple portal calls

Multiple portal calls via the same IP address increase number of used client licenses.

Access table in the "PDM Clients" tab

Column	Function
Network share	If you select the check box for a client (x), the computer with the IP address specified in the line is allowed to access the SIMATIC PDM Server.
IP address	Select the "Network share" check box and enter the IP address of a computer to be authorized to access the SIMATIC PDM Server.
Comment	Enter a plant-specific comment (e.g. name of the computer in the plant).

- **"Enable all possible clients" button**
  Activates all available PDM client licenses.
- **"Disable all clients"**
  Blocks access to the SIMATIC PDM Server.

Releasing licenses

To release a client, click on the selected check box of the client.
The IP address and the comment of the client is retained. You do not have to enter the information again the next time you use the client. The updated license information is displayed in the License Information section.

11.4.1.7 "Change Log" tab

"Enable change log" check box

When this check box is selected, a log file is created when changes are made in SIMATIC PDM.

"Automatic Archiving" area

Drop-down list	Explanations/operating instructions
Off	Disables automatic archiving of the log file.
By interval	Archives the log file in a particular cycle (yearly, monthly, weekly).
By limit value or memory size	Archives the log file once it has reached a particular memory size.

"Show input dialog for comments in change log" check box

If this check box is activated, the "Change log comment on process" dialog opens when changes are entered. You can enter comments in the entry dialog.

11.4.1.8 "Service" tab

Service options for EDD developers are activated in this dialog box. A "Debug log" is created if you activate options.

Recommendation:

Activate the service options for EDD developers only if instructed by the hotline to do so.

Trace mode

Field	Explanations/operating instructions
User	If this check box is selected, user actions are logged.
Errors	If this check box is selected, a log is started when an error occurs. After the first error message appears, all further error messages are listed.

Field	Explanations/operating instructions
Warning	If this check box is selected, a log is started when a warning occurs. After the first error message or warning appears, all further error messages or warnings are listed.
Communication	If this check box is selected, a log is started. After the first error message or warning appears, all further error messages or warnings are listed. In the "Communication" tab, you can specify what types of notes are recorded in the communication log.
Detail	If this check box is selected, a log is started when SIMATIC PDM starts. After the first message appears, all messages, warnings, and errors are listed.
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 selected, a log is started when SIMATIC PDM starts. After the first message appears, all messages, warnings, and errors are listed.
Warnings	If this check box is selected, a log is started when a warning occurs. After the first error message or warning appears, all further error messages or warnings are listed.
Errors	If this check box is selected, a log is started when an error occurs. After the first error message appears, all further error messages are listed.
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 enable logging when the Hotline instructs you to do so.

Tools for EDD development

Field	Explanations/operating instructions
Displaying EDD IDs	If this check box is selected, the parameter table shows the variable IDs of the EDD.
Open online dialogs offline	If this check box is selected 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.

11.4.2 Role management

Opens the "SIMATIC Logon Role Management" dialog box.

SIMATIC Logon Role Management is the SIMATIC Logon component used to create roles and assign Windows groups and users as well as operational permissions to the roles.

Role management is used to regulate access to applications and functions by users and groups.

Access protection forces users to log on to the system if they want to use an application or function.

By default in SIMATIC PDM, no roles are administered, which means there is no user assigned to a role. In order to manage roles in SIMATIC Logon, the user must be in the Windows group "Logon_Administrator".

Function rights and roles

You can create new roles yourself and provide them with function rights. Function rights allow access to specific SIMATIC PDM functions. These pre-defined function rights are preset by the software and cannot be changed or deleted.

It is not possible to create new function rights.

Function rights in SIMATIC PDM:

- Access to the command interface
- "Parameter View" menu command
- "Device" menu command
- "View" menu command
- "Diagnostics" menu command
- "Service" menu command
- "Write to device" menu command
- "Read from device" menu command
- "Save" menu command
- Online access to the device: Allows communication with the device

Predefined roles

The predefined roles "PDM CI" and "Service user" are created for SIMATIC PDM. The predefined roles can neither be changed nor deleted.

Role: PDM CI

The "PDM command interface" role controls access of an application to the PDM command interface. The application also reports the administered Windows user.

After a successful password check and check of role membership, the application is allowed access to PDM via the command interface.

Role: Service user

The role "Service user" allows access to the following menu commands and functions:

- "Parameter View" menu command
- "Device" menu command
- "View" menu command
- "Diagnostics" menu command
- "Service" menu command
- "Write to device" menu command
- "Read from device" menu command
- "Save" menu command
- Online access to the device: Allows communication with the device
- Access to a SIMATIC PDM Server

Note
Using a maintenance station

The Windows user using the ASSET must be a member of the "SIMATIC HMI" Windows group.

11.4.3 HART server

Opens the HART server application.

You can use SIMATIC PDM to configure HART devices for the following networks:

- Multiplexer networks
  - Multiplexer network with panel (for example, MTL multiplexer)
  - Multiplexer network without panel (for example, P+F multiplexer)
- Wireless HART gateway
  - You configure a wireless HART gateway as a HART multiplexer.

You need a HART server application in the project to integrate and manage these networks.

11.4.4 Extended parameter selection

This menu command is used to open the "Extended parameter selection" view.

The "Extended parameter selection" view enables you to select specific parameters for the device type selected in the tree topology.

The parameter selection configurations can be made individually for the different device types.

SIMATIC PDM Server option 12

12.1 Setting up the SIMATIC PDM Server

The SIMATIC PDM Server add-on includes:

- A SIMATIC PDM Server provides interactive websites to the user interface of SIMATIC PDM.
- The SIMATIC PDM portal is the interactive home page of the SIMATIC PDM Server.

Restrictions

Each session via a browser requires active connections to the SIMATIC PDM Server.

The maximum number of concurrent connections depends on the following:

- Permissible number of connections from the browser of the computer accessing the SIMATIC PDM Server.
- Permissible number of connections of the operating system of the SIMATIC PDM Server.

Ensure that the permissible number of simultaneous active connections is not exceeded.

Messages:

- **Session limit reached**
  If the server limit has been reached, you see the message "Session limit reached".
- **Connection error**
  If the client limit has been reached, you see the message "Connection error".

NOTICE
Number of permissible active connections exceeded The maximum number of concurrent sessions is limited. • Exceeding this number results in a short-term blockade of all logged-on users. • At the same time, a new user who exceeds this number cannot log on.

NOTICE
Limited functionality For use of the HART Server functionality, you must be logged onto the SIMATIC PDM Server locally.

Requirements

The following requirements must be fulfilled to operate SIMATIC PDM Server add-on:

- Microsoft Internet Information Server (IIS) with ASP.NET support must be enabled
  You can find information on this in the next section.
- SIMATIC PDM Server Configurator has been run.
  You use the configuration tool to activate the options of the SIMATIC PDM Server on the Internet Information Server.
  You can find information on the Server Configurator in the section "SIMATIC PDM Server Configurator (Page 287)".
- The port is entered in the Windows Firewall, which has been registered and enabled in the SIMATIC PDM Server Configurator. You need administrator rights to make this setting.
  SIMATIC PDM sets the firewall rule during its installation.
  If you use a different firewall, set these rules there and enable them.
- A maintenance project must be configured in SIMATIC Manager
  You can find information on this in the section ""Maintenance Station" tab (Page 277)".
- All Windows users who want to access the SIMATIC PDM Server are authorized for access.
  You can find information on this in the section "Role management (Page 280) ".
- SIMATIC PDM Web Server on a Windows Server
  If SIMATIC PDM is to be opened from a faceplate, the following conditions must be met:
  - The server is added to the list of "Trusted sites".
  - Under "Internet options" in the "Advanced" tab of the in Internet Explorer, "Play animations in webpages" option must be enabled.
- SIMATIC PDM Web client on a Windows Server
  - The server must be registered in the list of "Trusted Sites".
- If you are using a Windows installation with IIS 8.5 or later, you also have to activate the Web sockets.
- If computers are to access the SIMATIC PDM Server using a browser, they must be registered in the list of PDM clients.
  You can find information on this in the section ""PDM clients" tab (Page 278)".

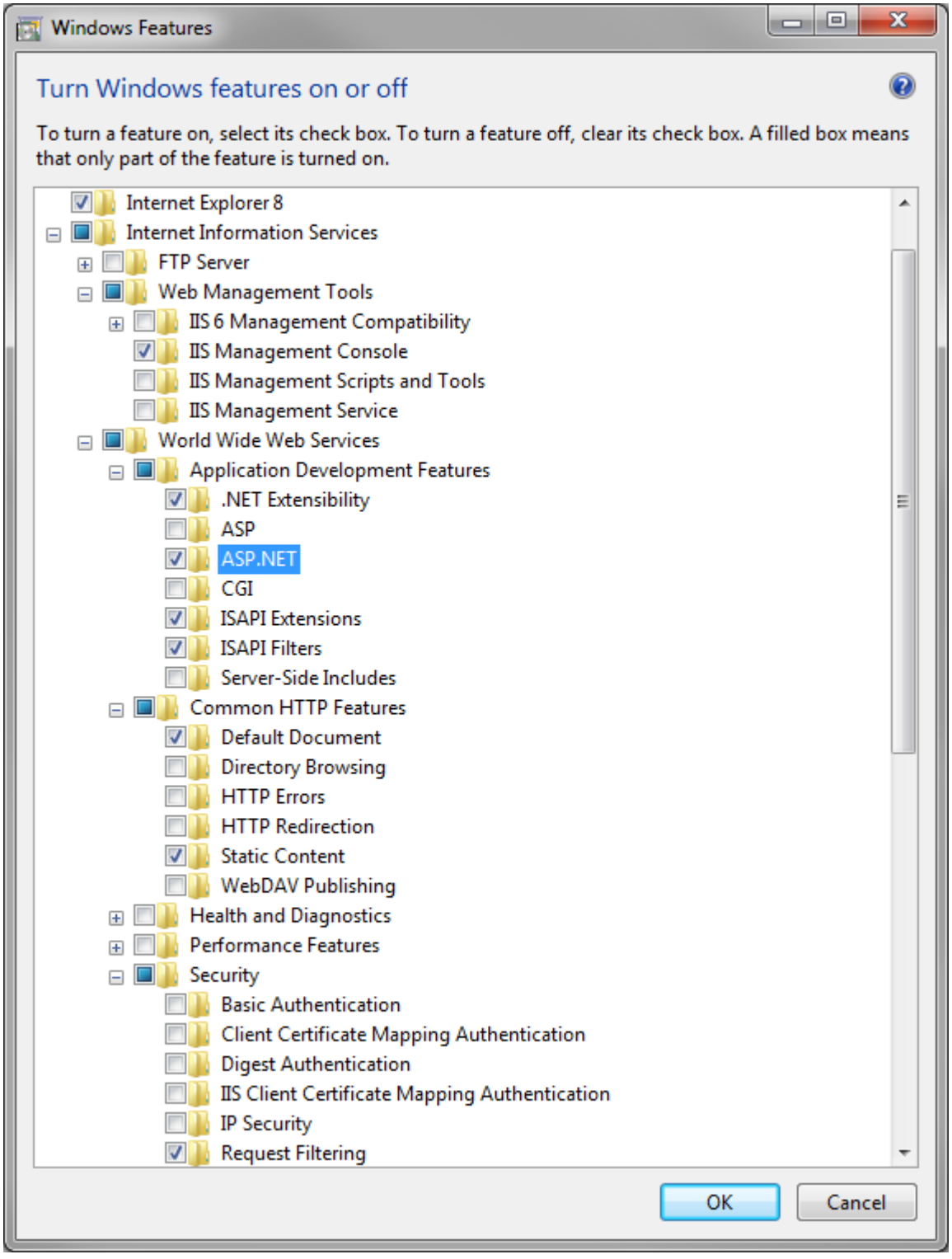
Enabling Microsoft Internet Information Server (IIS) with ASP.NET support

NOTICE
Compatibility with respect to operating system and ASP.NET If you use Server 2012, additional check boxes are available: • .NET Extensibility 4.5 • APS .NET 4.5 If you use Windows 10, Windows Server 2016, or Windows Server 2012, additional check boxes are available: • .NET Extensibility 4.6 • ASP .NET 4.6 The PDM Server Configurator does not check whether .NET Extensibility 4.5/4.6 is enabled. In order to use the PDM Server, ensure that the .NET Extensibility 4.5/4.6 is enabled.

To enable the Microsoft Internet Information Server with ASP.NET support, proceed as follows (example with Windows 7):

1. Open the Windows Control Panel.
2. Navigate to "Programs and Features" > "Turn Windows features on and off".
   The "Windows Features" dialog box opens.
3. Navigate through the tree structure to "Internet Information Services" and select the corresponding check box.
   If the check box is already selected, you can activate it again.
4. Navigate to "Internet Information Services" > "Management tools".
5. Select the "IIS Management Console" check box.
6. Navigate to "Internet Information Services" > "World Wide Web Services" > "Application Development Features".
7. Select the "ASP.NET" check box.
8. Navigate to "Internet Information Services" > "Common HTTP Features".

9. Select the "Static Content" check box.



10. Close the window with "OK".
    The Microsoft Internet Information Server with ASP.NET support is now enabled.

12.2 SIMATIC PDM Server Configurator

The SIMATIC PDM Server Configurator is an application on the SIMATIC PDM Server.
You can use the configuration tool to make settings for the communication of the SIMATIC PDM Server.

The communication of the SIMATIC PDM Server must be configured once before the initial start.

Opening the configuration tool

In the Windows Start menu, select the command **Programs > Siemens Automation > SIMATIC > SIMATIC PDM > PDM Server Configuration**.
The "SIMATIC PDM Server Configuration Tool" dialog window opens.

"SIMATIC PDM - Server configuration tool" dialog window

The following tabs may appear in the "SIMATIC PDM Server Configuration Tool" dialog window depending on the installed add-ons:

Installed option	Tabs
SIMATIC PDM Server	"PDM server" tab
SIMATIC PDM Command Service	"Command interface server" tab

"PDM server" tab

Note

All data are sent via an unsecured connection for HTTP access.

Transmission of data over a secure connection requires the following:

- A trusted server certificate is selected.
- Access is made via HTTPS.

Area	Field	Description
General information	Website name	Name of the website The default name usually only has to be changed if there is a conflict with another server program.
	Physical path	The files required to display SIMATIC PDM in a browser are located in this path.
Connection settings		

Area	Field	Description
Connection	"Certificate" input box	Certificate for the HTTPS connection A certificate is only required if a browser on the SIMATIC PDM Server is to have access via secure communication (HTTPS connection). Requirements for the certificate: • The certificate must be a computer certificate. • The certificate must have a corresponding private key. It must be located within the LocalMachine/Personal of the Windows Certificate Store container. • The certificate has a key encryption for key usage and server authentication for extended key usage. • The certificate has not expired. You can find information about importing certificates in the Microsoft Knowledge Base.
	"IP connection (optional):" input box	Fixed link to a network adapter or IP address
Ports	"Secure connection" check box	• If the check box is selected, a secure connection is established via HTTPS. • If the check box is not selected, a connection is established via HTTP.
	"Port http" input box	Port via which SIMATIC PDM Server can be reached via the unencrypted HTTP protocol The default port only needs to be changed if there is a conflict with another program.
	"Port https" input box	Port via which SIMATIC PDM Server can be reached via the encrypted HTTPS protocol The default port only needs to be changed if there is a conflict with another program.
Check box "Auto-start website"		If the check box is selected, SIMATIC PDM Server is ready for access via a browser. Clear the check box if you want to deny access to a browser.

"Command interface server" tab

The certificates are required for encrypting the data.

Area	Field	Description
Certificate management	List	List of available certificates
	"Import..." button	A certificate is required only if you want to encrypt the communication. • Open the "Import" dialog window. Select the path and a certificate file (file type: *.pem). • Click "OK". The certificate is checked and imported. The list is then updated.
	"Remove" button	Deletes a certificate selected in the list
	"Details" button	Displays information about the certificate.
Connection settings		
Server certificate	"Certificate file" drop-down list	Displays existing certificate files. Select the desired certificate file.
	"Private key file" drop-down list	Displays existing private key files. Select the desired private key file.
Port settings	"Port" input box	Port via which SIMATIC PDM Server can be reached. The default port only needs to be changed if there is a conflict with another program.

12.3 SIMATIC PDM Portal

The SIMATIC PDM portal is the interactive home page of the SIMATIC PDM Server.

After logging on to SIMATIC PDM Portal, you can view all projects and subprojects in the browser and change field devices.

IE11/Chrome must be used as browser on the SIMATIC PDM Web client. SIMATIC software is not required on the PDM client.

Note

For the secure operation of SIMATIC PDM, it is necessary to take suitable preventive action and integrate the PDM client into a holistic industrial security concept. For more information about industrial security, please visit http://www.siemens.com/industrialsecurity (http://www.siemens.com/industrialsecurity).

12.4 Logging on to the SIMATIC PDM Portal

The SIMATIC PDM portal is the interactive home page of the SIMATIC PDM Server.

After logging on to SIMATIC PDM Portal, you can view all projects and subprojects in the browser and change field devices.

Requirement

- For the computers that want to connect to the SIMATIC PDM Server through a browser, the following shall apply:
  - A unique, static IP address is assigned to the computer.
  - The IP address is registered in the settings of the SIMATIC PDM Server.
- The IP address for the router (gateway) is registered in the settings of the SIMATIC PDM Server.
- The computers that access a SIMATIC PDM Server using a browser are licensed**.**
  - The number of computers concurrently accessing the SIMATIC PDM Server corresponds to a maximum licensed number.
    Number of used and available licenses:
    You can find information on this in the SIMATIC Manager in the menu **Options > Settings** in ""PDM clients" tab (Page 278)".
- The users are assigned function rights and roles for SIMATIC PDM (see "Role management (Page 280)"):
  - Service technician
  - Plant-specific defined roles

Opening the SIMATIC PDM Portal

1. Open an browser.
2. Enter the URL of the SIMATIC PDM Server in the "Address" input box and confirm the entry. The browser connects you to the "SIMATIC PDM Logon" dialog box.

Note

Error messages during logon attempt

If you want to use a browser to access the SIMATIC PDM Server, error pages with information about the error may be displayed.

Typical errors are:

- The licensing is not sufficient.
- The IP address of the computer is not registered on SIMATIC PDM Server (access to IP address xyz not allowed).

Note

Multiple portal calls via the same IP address increase number of used client licenses.

It is therefore possible that the license error message is displayed, although the PC has already been registered successfully.

Note

Checking certificates

SIMATIC PDM automatically checks the validity of certificates when opening the applications. Some tests require specific network access, for example URLs that are located in the local network or the Internet. If these network addresses are not reached, there may be delays. You can find information on this in http://support.industry.siemens.com/cs/ww/de/view/87057037.

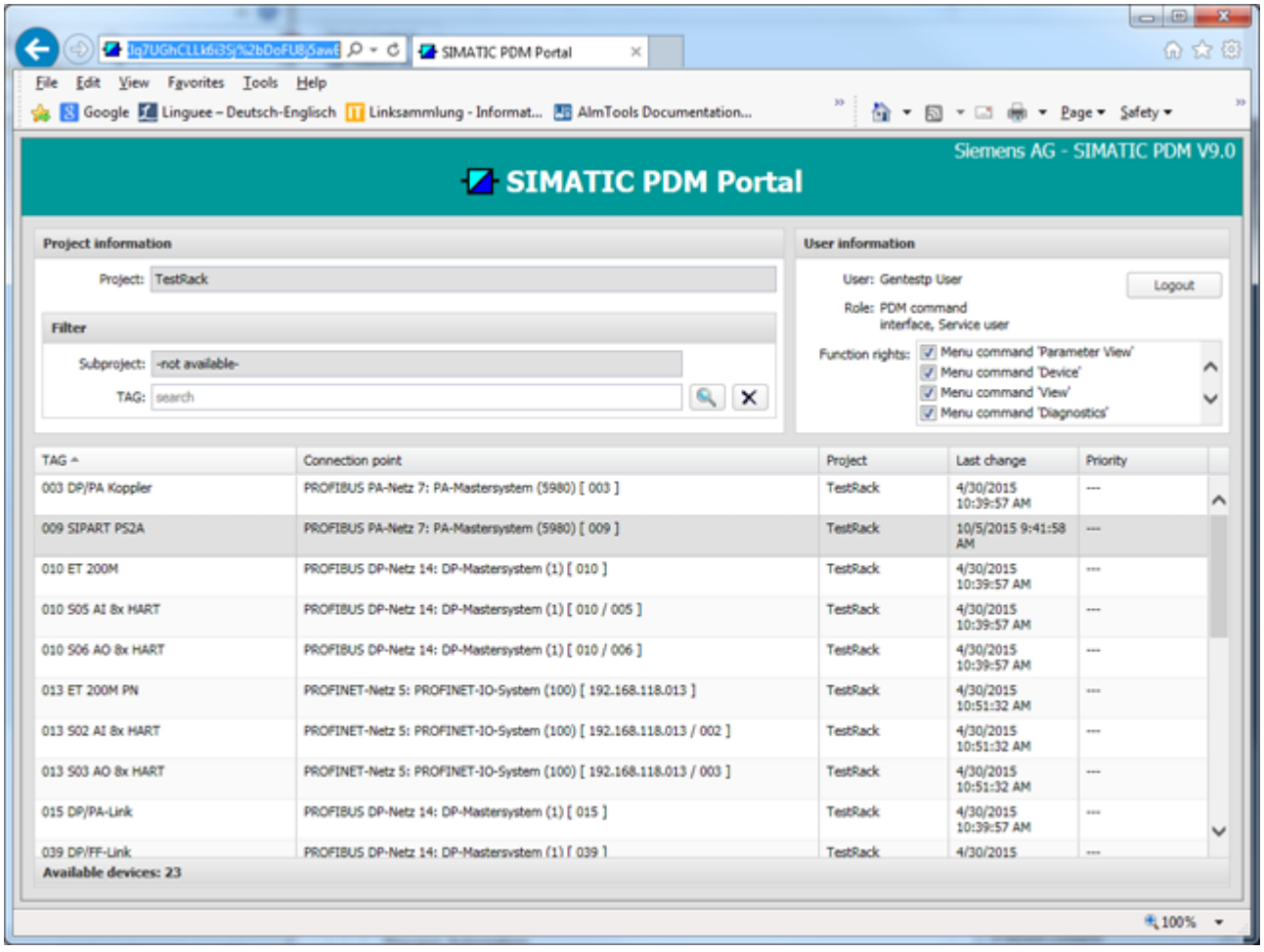
3. If the display language does not match your operating language, select a different language by selecting a national flag.



4. Specify your domain, user name and password in the text boxes and confirm the entries.

Domain	Specify a Windows domain, a logon computer with installed SIMATIC Logon (workgroup mode) or the local computer of the user who wants to log on to SIMATIC PDM Portal. "." is allowed for the local computer.
User name	Enter your Windows user name.
Password	Enter your Windows password.
"Remember me next time" check box	If you select this check box, your logon data is saved for the next access.

5. The browser connects you to the SIMATIC PDM Portal and shows the contents of the maintenance project.



See also

"SIMATIC PDM Portal" main window (Page 294)

12.5 "SIMATIC PDM Portal" main window

The SIMATIC PDM Portal has the following layout

"Project information" area

The "Project information" area shows the project currently running in SIMATIC PDM, and a filter area.

The settings in the "**Filter**" reduce the information displayed in the device list.

- If the currently active project in SIMATIC PDM is a multiproject, you can limit the information displayed by selecting a subproject.
- "Show devices" button: Shows all signal modules, interface modules and link modules.
  The display is reset the next time the portal is opened.
- If you enter a character string in the "Tag" input box, the information displayed is limited to the rows containing this character string.
- "Magnifying glass" button: Refreshes the device list.
- "X" button: Deletes the settings in the "Filter" are and refreshes the device list.

"User information" area

Displays information about the user:

- **User**: Logged-on user
- **Role**: Functional role of the user (e.g. administrator; service technician, etc.)
- **Function rights**: The list contains the actions that user can perform based on selected check boxes:
  - "Parameter view" menu command
  - "Device" menu command
  - "View" menu command
  - "Diagnostics" menu command
  - "Service" menu command
  - "Write to device" menu command
  - "Read from device" menu command
  - Online access to device
  - "Save" menu command
- **"Logoff" button**:
  Used for logging off from the SIMATIC PDM Server
  Automatic logoff of the session following inactivity is possible. You can find information on this in section ""Maintenance Station" tab (Page 277)".

Device list

Displays a list of devices that is selected by the settings in the "Project information" area.

The list has the following columns:

- Tag: PDM object
- Connection point: Path to AS
- Project: Assignment to multiproject / project / AS
- Last change: Time of change
- Priority: See section ""General" tab (Page 208)"

Device information that can be shown and hidden

By default, the device status, LID and project information are hidden in the process device plant view.
To set the visibility of one or more device information, select the table header, press the right mouse button.
Under "Columns" in the list, activate the check box for the entries that should be displayed.
Depending on the visible device information, you can see the information available for searching in the search field when searching in a drop-down list.
The drop-down list dynamically adjusts when you show or hide the device information. The tag information is preselected by default.
You can change the selection and this change is saved. If no selection is made in the drop-down list, the search button is disabled.

Status bar

Displays the number of devices that is selected by the settings in the "Project information" area.

12.6 Edit field device in SIMATIC PDM via the browser view

Requirements

- The SIMATIC PDM Portal is open.
- The user has been granted the function rights that are required for the action.
  You can find information on this in the section ""SIMATIC PDM Portal" main window (Page 294)"; subheading "User information"; "Function rights".

Procedure

1. Select the desired device in the "Tag" column of the device list.
2. Select the desire command in the shortcut menu.

Menu command	Function
Open	Opens the browser view of SIMATIC PDM for the desired device. You can find more information on this in the section "Menus and dialog boxes for SIMATIC PDM in the browser view (Page 296)".
Object properties	Opens the "AUTOHOTSPOT" dialog box for the desired device.
Device Selection (Reassign)	Opens the "Device selection (Reassign) (Page 247)" dialog box for the desired device.

12.7 Menus and dialog boxes for SIMATIC PDM in the browser view

12.7.1 "File" menu

You can find the following commands in the "File" menu in the browser view of SIMATIC PDM:

- Save (Page 187)
- Exporting (Page 244)
- Importing (Page 245)
- Print (Page 195)
- Exit (Page 196)

12.7.2 "Device" menu

You can find the following commands in the "Device" menu in the browser view of SIMATIC PDM:

- Download to device (Page 198)
- Upload to PG/PC (Page 200)
- Assign address and TAG (Page 203)
- AUTOHOTSPOT
- Calibration log ... (Page 212)
- Change log ... (Page 249)
- Check configuration
- Templates

12.7.3 "View" menu

You can find the following commands in the "View" menu in the browser view of SIMATIC PDM:

- Process variables (Page 228)
- Start LifeList (Page 247)
  Export of the LifeList data is not available in the browser view of SIMATIC PDM.

12.7.4 "Diagnostics" menu

You can find the following commands in the "Diagnostics" menu in the browser view of SIMATIC PDM:

- Update diagnostics (Page 232)

12.7.5 "Help" menu

You can find the following commands in the "Help" menu in the browser view of SIMATIC PDM:

- Contents... (Page 235)
- Help for device parameters... (Page 235)
- Info... (Page 235)
- Find (Page 235)
- Document Manager (Page 235)

Notes, Tips & Tricks 13

13.1 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 the 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 247)".

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 247)".

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.

Setting the time format in a system

Ensure you set the same time format (12 hour format / 24 hour format) for all programs and devices.

13.2 Connecting field devices by means of Industrial Ethernet

Difference between routing and data record routing

"Routing" refers to the transmission of data beyond network boundaries. 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 can include 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 is intended. 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.
- You 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, select the menu command **Target system > Edit Ethernet nodes...** .
  (You can find detailed information on the procedure in the online help for STEP 7.)

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 **PLC > Edit Ethernet Node...**.
   The "Edit Ethernet Node" dialog box 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" check box. The IE/PB-Link now operates like a PG/PC.
7. Once you have configured and programmed all stations, start NetPro and select the **Network > Save and Compile** menu 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.

13.3 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.

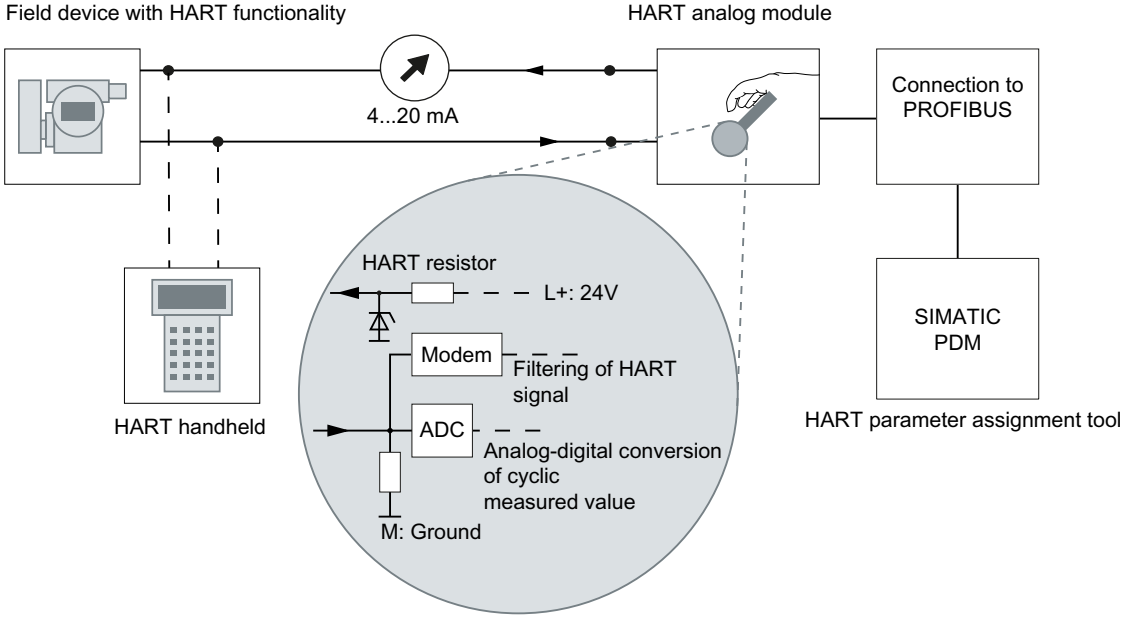


Figure 13-1 System environment: Use of HART

Appendix

A

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 31)".

- **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 31)"
  - Section "Replacing devices (Page 125)"
- 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

"

"Communication" Tab ("Settings" dialog box), 274
"Device" LifeList menu
    Assign address and TAG, 156
    Properties, 158
    Reassign, 157, 263
    Update diagnostics, 156
"Device" Tab ("Properties" dialog box), 208, 241
"Diagnostics" Tab ("Properties" dialog box), 209, 241
"Edit" LifeList menu
    Start Scan, 155
    Start Scan with diagnostics, 155
    Start Update diagnostics, 156
    Stop, 156
"File" LifeList menu
    Export, 154
"General" tab ("Properties" dialog box), 208, 240
"Help" LifeList menu, 158
    Info, 158
"Import" dialog box, 192
"Insert SIMATIC PDM Object(s)" dialog box, 255
"Maintenance Station" Tab, 277
"Messages" dialog box, 307
"Table" Tab ("Settings" dialog box), 274
"Value Comparison" dialog box, 206
"View" LifeList menu
    Messages, 158

A

About... (Help menu), 69, 215, 235
    Change log, 223
Add-ons for SIMATIC PDM, 28
ASSET
    Activating service, 176
    Permissions, 176
    Starting service, 177
Asset service
    Several PCS 7 projects, 177

C

Calibration log, 212
    Print, 214
    Saving, 214
Change
    Download, 132
Change log
    Add entry, 221
    Archive, 221
    Load archive, 221
    Print, 222
Close (File menu)
    Calibration log, 214
    Change log, 155, 222
    LifeList, 155, 222
Communication, 147
    Secure, 147
Complete device information, 60, 61
Configuring, 96
    Networks and devices, 24
    SIMATIC PDM Server, 287
Connection Editor
    Starting, 129
Contents (Help menu), 69, 235
    Change log, 223

D

Delete (File menu), 63
Device description
    Completing, 55
    Integrating, 54
    Removing, 57
Device description file
    EDD, 20
Device description files
    Compiling, 277
Device integration
    Compile EDD, 277
    Compiling device description files, 277
    Semantics, 277
    Settings, 277
Device Integration Manager
    Configuring, 276
    Settings, 276
Device libraries, 31
Device library
    Creating, 56, 57
Device menu, 198, 200, 204, 245, 246, 261, 262
Devices, 101, 121
    Integration in HW Config, 101, 121
    Read in number, 51
Diagnostic information, 143

Diagnostics, 143
Dialogs, 85
Display
    Process values, 228
Display process values, 228
Download, 132
    Downloading changes, 132
Download to devices (Device menu), 198, 245, 261
Downloading changes, 132

E

EDD
    Device description file, 20
Editor
    Access, 87
Exit (File menu), 63, 196
Export
    Parameter export, 137
    Structure export, 137
Export file
    XML, 138

F

File
    Export, 138
    Exporting, 138
    Import, 138
    Importing, 138
File menu, 63, 187, 196
Filter
    Change log, 222
Find (View menu)
    Change log, 222
Format
    Export, 138
    Import, 138
    Message log, 162
    XML, 138
    XSL, 138

G

Groups
    User, 176

H

Hardware
    Configuring, 87
HART modem network, 24
HART multiplexer network, 24
HART server network, 24
Help
    Trends, 173
Help menu, 69, 235
Help on device parameters (Help menu), 235
Help topics (Help menu, 215
HW Config, 101, 121
    Download to devices, 198, 245, 261
    Exporting, 187, 244, 261
    Importing, 191, 245, 261
    Integrating Devices, 101, 121
    Start Connection Editor, 129
    Synchronizing, 250
    Update diagnostic status, 232, 247, 263
    Upload to PG/PC, 200, 246, 262
    Value comparison, 205

I

Icons, 48, 77, 78, 145, 202
    Calibration log, 219
    Change log, 224
    Configuration, 145
    Device, 145
    Diagnostics, 145
    LifeList, 159
    Loading to devices, 233
    Maintenance, 145
    Operating mode, 145
    Process value, 145
    Toolbar, 48, 77
    Upload to PG/PC, 78, 202
IE/PB link, 301
Import
    Parameter import, 137
    Structure import, 137
Import file, 138
Integrate, 114, 117
    PROFIBUS device in SIMATIC PDM, 114
    PROFINET device in SIMATIC PDM, 117
Integrating a
    HART multiplexer network, 108
    Wireless HART gateway, 108, 113

Introduction, 13
SIMATIC PDM, 13

K

Keyboard operation, 85

L

Liability, 31
License information, 278
Licenses
LifeList, 153
LifeList, 149
Load FF segment
Tab, 132

M

Maintenance Station
Several PCS 7 projects, 177
Measured value display
Process variables, 228
Menu
Search..., 235
Message log
Saving, 162
Messages, 60, 61, 62
Modbus network, 24

O

Options menu, 176, 273

P

Parameter export, 137
Parameter import, 137
Parameter table, 79, 80
Parameters, 79, 80
PDM
Readme, 14
PDM client
License, 278
PDM Web, 284
Permissions
ASSET, 176
Process variables
Measured value display, 228
PROFIBUS device in SIMATIC PDM, 114
Integrate, 114
PROFIBUS DP, 22
PROFINET, 23
PROFINET device in SIMATIC PDM, 117
Integrate, 117

R

Readme, 14
Redundancy
Cancel, 123
Field devices, 122
Rights
ASSET, 176
Routing, 91

S

Save (File menu), 187
Scope, 18
Secure Communication, 147
Service
Activating ASSET, 176
Starting ASSET, 177
Settings
Device integration, 277
Device Integration Manager, 276
Semantics, 277
SIMATIC PDM, 176, 273
Several PCS 7 projects
Asset service, 177
Shortcut menu
Complete device information, 60, 61
Messages, 60, 61, 62
Remove device description(s), 61, 62
Shortcuts for menu commands, 85
Show all objects
Change log, 222
SIMATIC Manager
Download to devices, 198, 245, 261
Exporting, 187, 244, 261
Importing, 191, 245, 261
Start Connection Editor, 129
Synchronizing with HW Config, 250
Update diagnostic status, 232, 247, 263
Upload to PG/PC, 200, 246, 262
Value comparison, 205
SIMATIC PDM, 114, 117
Download to devices, 198, 245, 261
Exporting, 187, 244, 261

Importing, 191, 245, 261
Integrating a PROFIBUS device, 114
Integrating a PROFINET device, 117
Start Connection Editor, 129
Synchronizing with HW Config, 250
Update diagnostic status, 232, 247, 263
Upload to PG/PC, 200, 246, 262
Value comparison, 205
SIMATIC PDM Portal
Log on, 278
SIMATIC PDM Server
Configuration tool, 287
Split device list window (View menu), 63
Status, 80
Status bar, 51, 82
LifeList, 160
Structure export, 137
Structure import, 137
Symbols
Loading to devices, 199

T

Transformation file
XSL, 138
Trend
(View menu), 168, 169
Adjust display range, 172
Capture, 172
Help, 173
Link axes, 173
Move axis, 173
Move ruler, 172
Ruler, 172
Trends
(View menu), 230

U

Unit, 80
Update diagnostic status, 232, 247, 263
Upload to PG/PC (Device menu), 200, 246, 262
User
Groups, 176

V

Value, 79
View menu, 63
Process variables, 228
Tachometer chart, 168
Trend, 168, 169, 230
x-y charts, 166
y-t charts, 165
Views
Correlation, 128
Exception, 128

W

Web, 284
Wireless HART, 113