# Communication and Software

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HART protocol

**Overview**
HART is a widely used communication standard for field devices. Specification of HART devices takes place through the HCF (HART Communication Foundation).

The HART standard expands the analog 4 to 20 mA signal for modulated, industry-proven, digital signal transmission.

**Benefits**
- Service-proven analog measured value transmission
- Simultaneous digital communication with bidirectional data transmission
- Possibility of transmitting several measured variables from one field device (e.g. diagnosis, maintenance and process data)
- Connection to higher-level systems such as PROFIBUS DP
- Easy installation and startup

Use in conjunction with SIMATIC PDM
- Cross-vendor operation of all HART devices by means of standardized parameter records
- HART field devices that are described by HART DD are integrated in SIMATIC PDM through the HCF catalog. HART DD (Device Description) is standardized in SIMATIC PDM, multi-vendor and very widely used. Other HART field devices are integrated in SIMATIC PDM through EDD (Electronic Device Description)
- Easy operation and startup of field devices, also in hard-to-reach locations
- Expanded diagnosis, evaluation and logging functions

**Application**
These devices can be connected in different ways:
- Using the distributed I/O system
  - SIMATIC ET 200M with the HART modules
  - SIMATIC ET 200iSP with the HART modules or with analog modules 4 to 20 mA and a HART handheld communicator
- Using a HART modem, with which a point-to-point connection is established between the PC or engineering station and the HART device
- Using HART multiplexers, which are contained in the HART server of the HCF

**Integration**
Siemens field devices for process automation which are listed in this catalog and can be controlled using HART:

### Measuring instruments for pressure
- SITRANS P300
- SITRANS P310
- SITRANS P DS III
- SITRANS P410
- SITRANS P500

### Measuring instruments for temperature
- SITRANS TF
- SITRANS TH300
- SITRANS TR300
- SITRANS TW

### Flowmeters
- SITRANS F M MAG 5000
- SITRANS F M MAG 6000 19" / IP67
- SITRANS F M MAG 6000 I / I Ex
- SITRANS F M Transmag 2
- SITRANS F C MASS 6000 19" / IP67 / Ex d
- SITRANS F C FCT030
- SITRANS FUS060
- SITRANS FX300

### Measuring instruments for level
- Pointek CLS500
- SITRANS Probe LR
- SITRANS Probe LU
- SITRANS LUT400
- SITRANS LR200
- SITRANS LR250
- SITRANS LR260
- SITRANS LR460
- SITRANS LR560
- SITRANS LG240 / LG 250 / LG 260 / LG 270
- SITRANS LC500

### Positioners
- SIPART PS2

### Power supply units and isolation amplifiers
- SITRANS I

**Selection and Ordering data**

<table>
<thead>
<tr>
<th>Article No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7MF4997-1DB</td>
<td>HART modem with USB connection, available ex stock</td>
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</table>
Overview

WirelessHART is the first international industry standard for wireless communication at field level in the area of process automation. Hence this is the first time users are provided with a standard for wireless communication at field level which ensures the interoperability of instruments and components from different manufacturers.

Benefits

WirelessHART enables access to the following:
- Measuring and control values
- Parameters

of field devices with HART interface. These usually include pressure, temperature, level or flow transmitters or actuators.

WirelessHART allows for the following:
- wireless transmission of measured values and their status
- wireless parameterization and diagnosis of field devices

The WirelessHART adapter can be used to enable field devices with HART interfaces (that are designed for wired communication) for wireless communication. This allows users to continue using their proven devices while benefiting from and participate in advantages offered by wireless communication.

Application

Looking at the large number of possible applications and configurations, we generally differentiate between two application types.

Background for the first type is the fact that according to estimates forwarded by the HART Communication Foundation (HCF), approximately 85 % of the over 30 million HART devices in operation are used in an environment where only the 4 to 20 mA interface rather than the HART interface of the device is used on a system level. Generally, data on the device can only be read on site. This is of particular disadvantage with devices that contain self-diagnostic functions - that’s what we call "stranded diagnosis".

In these cases, a WirelessHART adapter can offer assistance. Connected to the 4 to 20 mA loop, it allows central access to the device based on wireless communication. It does not affect process control systems which continue to receive the measured value using the 4 to 20 mA loop.

Central access is enabled through a diagnostic station with SIMATIC PDM and SITRANS MDS software.

Main advantages:
- Increases the availability of the plant
- Increases plant transparency
- Reduces costs due to employing a predictive rather than preventative maintenance concept
- Reduces travel time in larger systems based on central access to field instrumentation

In the second application the 4 to 20 mA loop is omitted, all data including measured process values and diagnostic information are transmitted wirelessly to a process control system, for example.

Main advantages are:
- No planning and installation of data cables, resulting in significant cost reductions
- Higher system transparency due to additional and hitherto unfeasible installation of measuring points
- Process optimization due to flexible, temporary and cost-effective measuring points via wireless communication
- Utilization of proven devices by using adapters
- The WirelessHART meshed network also makes it possible to bridge longer distances

Design

This section introduces the application types described in the previous section in greater detail.

The figure below shows a typical situation for the first application type.

The adapter is connected to the 4 to 20 mA loop, which is used to transmit the measured value to the control system, or transmit the setpoint to an actuator. The existing control system is not affected by the WirelessHART adapter.

The data, in particular diagnostic data from the devices is transmitted to the IE/WSN-PA LINK via the connected adapter and the WirelessHART network. The link provides this data to a diagnostic and maintenance station with installed SITRANS MDS software and SIMATIC PDM via an industrial Ethernet. Industrial wireless LAN can be used to save on the installation costs required for Ethernet wiring. An extensive product portfolio of Scalance W components is available for this purpose.

The functionality of related to the SITRANS MDS is described in great detail on page 8/9 of this catalog.
WirelessHART

The properties of WirelessHART can be summarized as follows:

- Simplicity in handling and engineering
- Secure communication
- Availability in network

**Simplicity in handling and engineering**

- Utilize current tools, same workflow
- Devices can be operated externally with 24 V DC, external or integrated battery packs as well as solar cells. The option of using energy from the process or the environment has been researched at universities and industry for some time. It is expected that results and products will be available in the medium term.
- Reduced installation costs
- Coexists with other wireless networks
  - WirelessHART only uses the ISM band in the 2.4 GHz area, since it is available across the globe. However, it is also used by Industrial Wireless LAN (IWLAN), for example. For this reason, a requirement to allow WirelessHART to co-exist with Wireless LAN networks was an absolute requirement when this technology was defined. This coexistence has been achieved by constantly changing the channels and hence frequencies. This is also called "channel hopping". Moreover, individual channels can be completely disabled through so-called "blacklisting", for example if they are locally used by IWLAN.
- Support of star-shaped and meshed network topologies
  - Networks can be built in both a star-shaped as well as meshed structure. The advantage of star-shaped networks with a gateway as the center is that it allows for fast update cycles. However, the range of the network is limited to a maximum of approx. 200 m without obstacles between the gateway and the devices.
  - The advantage of meshed networks is their greater range, since each participant in the network is also a repeater and forwards the data of remote participants towards the gateway. The disadvantage: increased transmission times for data between the field device and the gateway.
- Faster commissioning
  - Once the device is installed, it can usually be commissioned right away, since the usual waiting time for completing the installation of the cables does not apply in this case.
- Self-organizing and self-healing networks
  - WirelessHART networks are automatically organized, built and administered by the Network Manager. Engineering is usually not required.
  - The Network Manager is implemented in the IE/WSN-PA LINK, the WirelessHART gateway from Siemens.
  - It calculates the optimal connection routes between the network participants and defines an alternative path that can be used in the case of disruptions in advance. In that sense, the network can be considered self-healing.
  - In addition, the Network manager also defines the channels or frequencies to be used for all communication. Statistics regarding communication are compiled automatically and are available to users.
- Security - always active
  - All designated mechanisms with regard to security are available automatically, and do not require any engineering.
- Make changes in the network without the need for configuration
  - The Network Manager automatically adds and withdraws participants to/from the network.

The figure below shows a typical situation for the second application type.

WirelessHART is integrated into SIMATIC systems parallel to the wire-connected devices with HART or PROFIBUS interfaces. In this case, the 4 to 20 mA line to the control system is not required: all data, i.e. process values, parameters, diagnostic information and functions, is supplied to the automation system on a wireless basis. This is mainly useful for replacement and expansion measures related to existing systems, and of course also new systems, but also for temporary and mobile measurements.

The field devices are standard instruments with connected adapters, or those with integrated wireless communication.

In principle, a differentiation needs to be made between wireless communication and the power supply for the devices.

When installing a field device, the planning and installation of the data cable to the control system is usually considered a significant cost driver. This factor is greatly reduced when using wireless communication.

When using 4 to 20 mA/HART field devices with adapters, the question of powering up always arises - in contrast to battery-powered field devices with integrated wireless modules.

It is important to distinguish between two and four-wire devices here. Under certain circumstances, the SITRANS AW200 adapter can take over the supply of a connected two-wire device. The power consumption of the field device plays an important role here. If it is too high, an additional power supply becomes necessary. If more than one device is connected to the SITRANS AW200 adapter, an additional power supply is required.

Four-wire devices always require an additional power supply.
**Secure communication**
- Encryption - All information is automatically encrypted with 128 bit AES prior to transmission
- Specific keys for each data packet
- Data integrity - Each data packet is checked for changes or damage during transport.
- Device authentication
  Each device must know the network identification number as well as the join key. Otherwise the Network Manager does not include it in the network.
- Channel Hopping
  The channel which is used will be changed according to the Network manager's specifications after each telegram. This provides an added level of security against spying activities.
- Failed authentication report
  Each unsuccessful attempt by a participant to join the network will be recorded and made available to the user.

**Availability in network**
- Communication based on IEEE 802.15.4-2006
  Wireless communication takes place on the basis of a proven industry standard. It allows for very minimal power consumption.
- Utilization of ISM band (2.4 GHz)
  This band can be used worldwide without incurring additional costs.
- Channel hopping overcomes disruptions
  Disruptions are usually limited to a small frequency range. By constantly changing the channel, it is possible to overcome the effects of such disruptions and hence increase the network's reliability.
- Channel Black Listing permanently blocks disrupted channels.
  When operating another network at the same location, the channels occupied by that network can be blocked in the WirelessHART network.
- Self-healing network
  This aspect has already been discussed
- Redundant communication paths
  The Network manager automatically calculates redundant communication paths. This significantly increases the level of availability.

**Software Overview**
Applications 1 and 2 will require the following software products

<table>
<thead>
<tr>
<th>Component</th>
<th>Products</th>
<th>Article No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Diagnostic Station</td>
<td>SITRANS MDS</td>
<td>1)</td>
</tr>
<tr>
<td>Process Device Manager</td>
<td>SIMATIC PDM and Options</td>
<td>See page 8/17</td>
</tr>
<tr>
<td></td>
<td>HART OPC Server V3.2</td>
<td>Included in SIMATIC PDM1)</td>
</tr>
<tr>
<td>WirelessHART gateway</td>
<td>IE/WSN-PA LINK with integrated non-removable antenna</td>
<td>6GK1411-6CA40-0AA0</td>
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<tr>
<td>WirelessHART adapter</td>
<td>SITRANS AW2002)</td>
<td>7MP3112-1AA00-0AA0</td>
</tr>
<tr>
<td>Process control system</td>
<td>SIMATIC PCS 7</td>
<td>9AE4110-3AA00</td>
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<td></td>
<td>SIMATIC S7/SIMATIC PCS 7 function blocks for communicating with WirelessHART devices using the IE/WSN-PA LINK</td>
<td></td>
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<tr>
<td>WirelessHART gateway</td>
<td>IE/WSN-PA LINK with integrated non-removable aerial2)</td>
<td>6GK1411-6CA40-0AA0</td>
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<td>Field devices</td>
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<td>SITRANS AW2102)</td>
<td>7MP3111-...</td>
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<tr>
<td></td>
<td>SITRANS P2802)</td>
<td>7MP1120-...</td>
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<tr>
<td></td>
<td>SITRANS TP2802)</td>
<td>7MP1110-...</td>
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</tbody>
</table>

1) You can also contact your Siemens contact person.
2) Other versions and accessories can be found in the product descriptions of this catalog.

**More information**
More detailed information on the required WirelessHART software and hardware components can be found in the FI 01 catalog or at www.siemens.com/wirelesshart.
Communication and Software

PROFIBUS

Overview

Today, distributed automation solutions based on open field buses are state-of-the-art in large areas of the manufacturing industry and process engineering. It is only with field buses that the functional benefits of digital communication can be put to full use, e.g., better resolution of measured values, diagnosis options and remote parameterization.

PROFIBUS is today's most successful open field bus with a large installed base for a wide range of application. Standardization to IEC 61158 / EN 50170 provides you with future protection for your investment.

Benefits

- A uniform modular system from the sensor into the control level enables new plant concepts
- Problem-free exchangeability of field devices, including from different manufacturers, that comply with the standard profile
- Networking of transmitters, valves, actuators etc.
- Implementation of intrinsically safe applications through use of the field bus in hazardous areas
- Easy installation of 2-wire lines for joint energy supply and data transmission
- Reduced cabling costs through savings of material and installation time
- Reduced configuration costs through central, simple engineering of the field devices (PROFIBUS PA and HART with SIMATIC PDM, also cross-vendor)
- Fast and error-free installation
- Lower service costs thanks to simpler wiring and plant structure plus extensive diagnosis options
- Greatly reduced commissioning costs through simplified loop check
- Scaling/digitizing of the measured values in the field device already, hence no rescaling necessary in SIMATIC PCS 7

Application

PROFIBUS is suitable for fast communication with distributed I/Os (PROFIBUS DP) in production automation as well as for communication tasks in process automation (PROFIBUS PA). It is the first field bus system that meets the demands of both areas with identical communication services.

The transmission technique of the PROFIBUS PA is tailored to the needs of the process industry. Interoperability between field devices from different manufacturers and remote parameterization of the field devices during operation are guaranteed by the standardized communication services.

Using SIMATIC PDM (Process Device Manager), a uniform and cross-vendor tool for configuring, parameterizing, commissioning and diagnosis of intelligent process devices on the PROFIBUS, it is possible to configure a wide variety of process devices from different manufacturers using one uniform graphical user interface.

PROFIBUS PA can just as readily be used in standard environments as well as hazardous areas. For use in hazardous areas, PROFIBUS PA and all connected devices have to be designed with type of explosion protection Ex [1].

The uniform protocol of PROFIBUS DP and PROFIBUS PA enables the two networks to be interlinked, thus combining time-based performance with intrinsically safe transmission.

Function

PROFIBUS PA expands PROFIBUS DP with near-process components for the direct connection of actuators and sensors. For PROFIBUS PA the RS 485 transmission technique was replaced by a different technique optimized for intrinsically safe application. Both techniques are internationally standardized in IEC 61158.

PROFIBUS PA uses the same communication protocol as PROFIBUS DP; the communication services and telegrams are identical.

For PROFIBUS PA the data and energy supply for the field devices can be directed through a 2-wire line.

Integration

Siemens field devices for process automation which are listed in this catalog and can be controlled using PROFIBUS:

**PROFIBUS PA**

- **Measuring instruments for pressure**
  - SITRANS P300
  - SITRANS P DS III
  - SITRANS P410

- **Measuring instruments for temperature**
  - SITRANS TH400

- **Flowmeters**
  - SITRANS F M MAG 6000 19” / IP67
  - SITRANS F M MAG 6000 I / I Ex
  - SITRANS F M Transmag 2
  - SITRANS F C MASS 6000 19” / IP67 / Ex d
  - SITRANS FUS060

- **Measuring instruments for level**
  - Pointek CLS200
  - Pointek CLS300
  - SITRANS Probe LU
  - SITRANS LR200
  - SITRANS LR250
  - SITRANS LR260
  - SITRANS LR460
  - SITRANS LR560

- **Electropneumatic positioners**
  - SIPART PS2

- **Acoustic sensor for pump monitoring**
  - SITRANS DA400

**PROFIBUS DP**

- **Flowmeters**
  - SITRANS F M MAG 6000 19” / IP67
  - SITRANS F M MAG 6000 I
  - SITRANS F C MASS 6000 19” / IP67
  - SIFLOW FC070 (via ET200M)

- **Measuring instruments for level**
  - HydroRanger 200
  - MultiRanger 100/200
  - SITRANS LU01, LU02, LU10

- **Acoustic sensor for pump monitoring**
  - SITRANS DA400
Overview

Today, distributed automation solutions based on open field buses are state-of-the-art in large areas of the process engineering industry. It is only with field buses that the functional benefits of digital communication can be put to full use, e.g. better resolution of measured values, diagnosis options and remote parameterization.

Like PROFIBUS PA, the FF bus (FOUNDATION Fieldbus) is an open field bus with a large installed base for a wide range of application. Standardization to IEC 61158 / EN 50170 provides you with future protection for your investment.

Benefits

- A uniform modular system from the sensor to the connection to the control level enables new plant concepts
- Networking of transmitters, valves, actuators etc.
- Implementation of intrinsically safe applications through use of the field bus in hazardous areas
- Easy installation of 2-wire cables for joint energy supply and data transfer
- Reduced cabling costs through savings of material and installation time.
- Reduced configuration costs through central, simple engineering of the field devices, also cross-vendor
- Fast and error-free installation
- Lower service costs thanks to simpler wiring and plant structure plus extensive diagnosis options
- Greatly reduced commissioning costs through simplified loop check
- Scaling/digitizing of the measured values in the field device already, hence no rescaling necessary in SIMATIC PCS 7

Application

The transfer technology of the FOUNDATION Fieldbus is tailored to the needs of the process industry. Interoperability between field devices from different manufacturers and remote parameterization of the field devices during operation are guaranteed by the standardized communication services.

FOUNDATION Fieldbus can just as readily be used in standard environments as in hazardous areas. For use in hazardous areas, FOUNDATION Fieldbus and all connected devices have to be designed with type of explosion protection Ex [i].

Function

FOUNDATION Fieldbus enables the direct connection of actuators and sensors.

FOUNDATION Fieldbus is based on a transfer optimized for intrinsically safe application. The transfer technology is internationally standardized in IEC 61158.

For FOUNDATION Fieldbus the data and energy supply for the field devices can be directed through a 2-wire cable.

FOUNDATION Fieldbus enables device-to-device communication ("control in the field").

Integration

Siemens field devices for process automation which are listed in this catalog and can be controlled using Foundation Fieldbus:

Measuring instruments for pressure
- SITRANS P300
- SITRANS P DS III
- SITRANS P410

Measuring instruments for temperature
- SITRANS TH400

Electropneumatic positioners
- SIPART PS2

Flowmeters
- SITRANS F M MAG 6000
- SITRANS F M MAG 6000 I / I Ex
- SITRANS F C MASS 6000

Level meters
- SITRANS LR250
- SITRANS LR560
Communication and Software

WirelessHART Communication

Communication blocks

Overview

The WirelessHART communication blocks implement the communication between S7/PCS 7 automation systems and WirelessHART field devices. They communicate via the IE/WSN-PA LINK using the Modbus TCP/IP protocol. Preconfigured communication blocks simplify the engineering process. Symbols and face plates are included in the delivery for use with SIMATIC PCS 7 OS or SIMATIC WinCC.

Benefits

A library, which can be installed, offers pre-fabricated blocks and hence an easy way to integrate WirelessHART devices into the SIMATIC automation world.

Simple configuration thanks to:
- Prefabricated function blocks for IE/WSN-PA LINK and WirelessHART devices
- SIMATIC PCS 7 OS or SIMATIC WinCC symbols and face plates are included
- Configuring help for IE/WSN-PA LINK in line with function blocks
- Output of quality codes for respective process values
- Analysis of IE/WSN-PA LINK diagnostic information

Function

The function blocks cyclically communicate with the IE/WSN-PA LINK via Modbus TCP/IP. Process values of WirelessHART devices as well as their status are read and made available at the function block outputs. Furthermore, selected status information of the IE/WSN-PA LINK is also made available at another building block. This information includes connection status, condition of the wireless network and other diagnostics. Precondition of the usage of these communication blocks is a TCP/IP connection, engineered in NetPro in the Engineering Station of Simatic PCS 7. Currently this requires a CP343 or a CP443-1.

Configuration

The standard S7 or PCS 7 engineering tools CFC, KOP, FUP can be used for the communication block engineering. Connection planning is done in NetPro. A configuration example for configuring the IE/WSN-PA LINK makes it easy to assign the WirelessHART devices to the communication blocks which need to be engineered.

More information

You can obtain function blocks and technical support for integrating the IE/WSN-PA LINK in PCS 7 at the following address:

Siemens AG
DF CS DS PAS R&D-AP
Roland Heid
Siemensallee 84
76187 Karlsruhe
Germany
Tel: +49 721 595-6380
E-Mail: function.blocks.industry@siemens.com

Selection and Ordering data

<table>
<thead>
<tr>
<th>Article No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>9AE4110-3AA00</td>
<td>S7/PCS 7 function blocks for communicating with WirelessHART devices using the IE/WSN-PA LINK</td>
</tr>
</tbody>
</table>

S7-300 or S7-400, including face plate

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### Overview

SITRANS MDS for flexible and automated diagnostic processing:
- Central display of diagnostic information from HART devices, which was only readable on site until now.
- Adjustable updating period for each device
- Clear visualization of diagnostic status of all devices
- Simply transfer of SIMATIC PDM configuring data
- Windows-based application

### Benefits

SITRANS MDS in cooperation with SIMATIC PDM increases significantly the transparency of a plant.

The main advantages of SIMATIC MDS are as follows:
- Increase transparency of the plant by reading diagnostic information from accessible devices and providing a well-organized representation of this information
- Representation of diagnostic status of a device as in SIMATIC PCS 7 or NAMUR NE 107 (switchable)
- Ease of use through use of SIMATIC PDM project data
- The update cycle for the diagnostic status can be uniformly set as the default value for all devices ...
- ... as well as for each device individually

### Application

SITRANS MDS increases the transparency of a plant by centrally collecting diagnostic information, directly from the accessible field devices. In principle, all devices that are integrated in SIMATIC PDM can be included in the collecting process.

SITRANS MDS can be used where the installed automation system does not support an integrated acyclic communication of parameters and diagnostic information with the devices. In the case of HART devices, this applies to 85% of all installed devices.

The modern SIMATIC PCS 7 process control system allows for this type of continuous communication from the engineering system up to the devices. It also features a decidedly higher performance asset management system. The use of SIMATIC MDS therefore does not make sense in a SIMATIC PCS 7 environment and is hence not approved for that purpose.

### Design

SITRANS MDS uses SIMATIC PDM project data to read and display diagnostic data from accessible devices.

### Integration

SITRANS MDS is installed on a PC together with SIMATIC PDM. Only the stand-alone version is used in this case.

### Configuration

Configuration required for SITRANS MDS is adopted from SIMATIC PDM. Only the project name must be entered.

Very few other entries are required, such as the definition of update periods.
SITRANS MDS - Maintenance Diagnostic Station

**Technical specifications**

<table>
<thead>
<tr>
<th>SITRANS MDS Maintenance Diagnostic Station</th>
<th>Microsoft Windows XP professional SP2/SP3</th>
</tr>
</thead>
</table>

**Additionally required software**

- SIMATIC PDM as of V 6.05 and options
  - SIMATIC PDM Basic (4 Tags) 6ES7 658-3AX16-0YA5
  - SIMATIC PDM service (128 Tags) 6ES7 658-3JX16-0YA5
  - SIMATIC PDM Option HART Mux 6ES7 658-3EX16-2YB5

**Additional options to increase number of measuring points**

**PC hardware**

- 600 MHz
- 256 MB *)
- XGA 1024 x 768
- 16 Bit color depth

*) main memory of at least 512 MB is recommended

Up-to-date information can be found in the description for SIMATIC PDM

**Selection and Ordering data**

SITRANS MDS is a software package which is delivered together with the IE/WSN-PA LINK for Version 1.0.
Overview

SIMATIC PDM (Process Device Manager) is a universal, vendor-independent tool for the configuration, parameter assignment, commissioning, diagnostics and servicing of intelligent field devices (sensors and actuators) and field components (remote I/Os, multiplexers, control-room devices, compact controllers), which in the following sections will be referred to simply as devices.

Using one software, SIMATIC PDM enables the processing of more than 2,500 devices from Siemens and over 200 vendors worldwide on one homogeneous user interface.

The user interface satisfies the requirements of the VDI/VDE GMA 2187 and IEC 65/349/CD directives. Parameters and functions for all supported devices are displayed in a consistent and uniform fashion independent of their communication interface. Even complex devices with several hundred parameters can be represented clearly and processed quickly.

Using SIMATIC PDM it is very easy to navigate in highly complex stations such as remote I/Os and even connected field devices.

From the viewpoint of device integration, SIMATIC PDM is the most powerful open device manager available in the world. Devices which previously were not supported can be integrated in SIMATIC PDM by importing their device descriptions (EDD). This provides security for your investment and saves you investment costs, training expenses and follow-up costs.

SIMATIC PDM supports the operative system management in particular through:
- Uniform presentation and operation of devices
- Uniform representation of diagnostics information
- Indicators for preventive maintenance and servicing
- Detection of changes in the project and device
- Increasing the operational reliability
- Reducing the investment, operating and maintenance costs

When a maintenance station is configured in the SIMATIC PCS 7 process control system, SIMATIC PDM is integrated in it and transmits parameter data and diagnostic information. You can switch directly to the SIMATIC PDM views from the diagnostics faceplates in the maintenance station.

As an option, SIMATIC PDM can also be started on any SIMATIC PCS 7 maintenance station client (MS Client) in order to parameterize and diagnose the devices integrated per Electronic Device Description (EDD). In this context, SIMATIC PDM user administration based on SIMATIC Logon allows various roles with defined function privileges to be assigned to users. These function privileges refer to SIMATIC PDM system functions, e.g. writing to the device.

For all devices described per Electronic Device Description (EDD), SIMATIC PDM delivers a range of information for display and further processing on the maintenance station, e.g.:
- Device type information (electronic rating plate)
- Detailed diagnostics information (manufacturer information, information on error diagnostics and troubleshooting, further documentation)
- Results of internal condition monitoring functions
- Status information (e.g., local configuration changes)
- Information on changes (audit trail report)
- Parameter information
# SIMATIC PDM Process Device Manager

## Application

### Components

<table>
<thead>
<tr>
<th>Product packages</th>
<th>SIMATIC PDM stand-alone</th>
<th>SIMATIC PDM system-integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum configuration</td>
<td>SIMATIC PDM Single Point</td>
<td>SIMATIC PDM Service</td>
</tr>
<tr>
<td>Basic configuration</td>
<td>V8.2</td>
<td>V8.2</td>
</tr>
<tr>
<td>SIMATIC PDM S7</td>
<td>V8.2</td>
<td>V8.2</td>
</tr>
<tr>
<td>SIMATIC PDM PCS 7</td>
<td>Server V8.2</td>
<td>FF V8.2</td>
</tr>
</tbody>
</table>

### SIMATIC PDM expansion options

| SIMATIC PDM Basic                | o                        | o                              |
| SIMATIC PDM Extended             | o                        | o                              |
| SIMATIC PDM integration in STEP 7/PCS 7 | o  | o | o | o |
| SIMATIC PDM routing              | o                        | o                              |
| SIMATIC PDM Server               | o                        | o                              |
| SIMATIC PDM Communication        | o                        | o                              |
| FOUNDATION Fieldbus              | o                        | o                              |
| SIMATIC PDM command interface    | o                        | o                              |

### SIMATIC PDM product structure

- **Product component is part of the product package**
- **Optional product component for the product package; order additive**
  
### Customer-oriented product structure

SIMATIC PDM is highly versatile in the context of Totally Integrated Automation (TIA): Stand-alone or system-integrated in a SIMATIC PCS 7 / SIMATIC S7 configuration environment.

The customer-oriented products structure of SIMATIC PDM helps you to adapt the scope of functions and performance to your individual requirements. You have the following options:

**SIMATIC PDM stand-alone**

- **Local service station on a mobile computer with a local bus connection or with direct connection to the device, optionally with:**
  - SIMATIC PDM Single Point for processing a single field device via a point-to-point coupling
  - SIMATIC PDM Service for extended service tasks

- **Central service station on a stationary computer on the system bus with access to devices that are connected to the bus-coupled S7-300/S7-400/S7-1500 automation systems via PROFIBUS field bus:**
  - SIMATIC PDM Service for extended service tasks in combination with the SIMATIC PDM Routing option

- **Product package SIMATIC PDM Basic as the basis for an individual SIMATIC PDM configuration with optional product components (see table)**

**SIMATIC PDM system-integrated**

- **Product packages for integration of SIMATIC PDM in the engineering system (engineering toolset) and Maintenance Station of the SIMATIC PCS 7 process control system:**
  - SIMATIC PDM PCS 7
  - SIMATIC PDM PCS 7 Server (enables SIMATIC PDM to be started on any MS client)
  - SIMATIC PDM PCS 7-FF (also supports the FOUNDATION Fieldbus H1)

- **Product package SIMATIC PDM S7 for integration in a SIMATIC S7 configuration environment**

In some circumstances, the various product packages can be expanded with optional product components (for details, see the Design section).**Selection criteria**

In addition to considering the environment of use and the functional and performance features when selecting the product (see table in "Design" section), also observe the system requirements (see "Technical specifications" section).
## Design

### Product range

<table>
<thead>
<tr>
<th>TAGs contained</th>
<th>SIMATIC PDM Single Point V8.2</th>
<th>SIMATIC PDM Basic V8.2</th>
<th>SIMATIC PDM Service V8.2</th>
<th>SIMATIC PDM S7 V8.2</th>
<th>SIMATIC PDM Server V8.2</th>
<th>SIMATIC PDM PCS 7 FF V8.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project: Create offline</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Project: Usable TAG extensions</td>
<td>–</td>
<td>•</td>
<td>•</td>
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<tr>
<td>Project: Process device network view</td>
<td>•</td>
<td>•</td>
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<tr>
<td>Project: Process device plant view</td>
<td>–</td>
<td>–</td>
<td>•</td>
<td>•</td>
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<td>•</td>
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<tr>
<td>Project: Export/Import devices</td>
<td>–</td>
<td>–</td>
<td>•</td>
<td>•</td>
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<tr>
<td>Project: Export/Import parameters</td>
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<td>•</td>
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<tr>
<td>Project: HW Config</td>
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<tr>
<td>Project: Utilization of SIMATIC PDM options</td>
<td>–</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
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<tr>
<td>Project: Integration in STEP 7/PCS 7</td>
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<td>•</td>
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<tr>
<td>Communication: HART modem</td>
<td>•</td>
<td>•</td>
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<td>•</td>
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<tr>
<td>Communication: HART interface</td>
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<td>•</td>
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<tr>
<td>Communication: PROFINET DP/PA</td>
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<td>•</td>
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<tr>
<td>Communication: HART over PROFIBUS DP</td>
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<tr>
<td>Communication: FF H1</td>
<td>–</td>
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<tr>
<td>Communication: Modbus</td>
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<tr>
<td>Communication: Ethernet</td>
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<td>Communication: PROFINET</td>
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<td>Communication: HART over PROFINET</td>
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<tr>
<td>Devices: Export/Import parameters</td>
<td>–</td>
<td>•</td>
<td>•</td>
<td>•</td>
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<tr>
<td>Devices: Comparison of parameter values</td>
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<td>•</td>
<td>•</td>
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<tr>
<td>Devices: Saving parameters</td>
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<tr>
<td>Devices: Change log (Audit Trail)</td>
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<td>•</td>
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<tr>
<td>Devices: Calibration report</td>
<td>–</td>
<td>•</td>
<td>•</td>
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<tr>
<td>Devices: Print function</td>
<td>–</td>
<td>•</td>
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<tr>
<td>Devices: Document manager</td>
<td>–</td>
<td>•</td>
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<tr>
<td>Lifelist: Basic functionality</td>
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<tr>
<td>Lifelist: Expanded functionality (scan range, diagnostics, export, addressing)</td>
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<td>•</td>
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<tr>
<td>Communication: S7 routing</td>
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<td>Communication: HART multiplexer</td>
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<td>•</td>
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<tr>
<td>Communication: Wireless HART</td>
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<td>•</td>
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<tr>
<td>Function: HART SHC mode (increased communication speed)</td>
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<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
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<tr>
<td>Function: Device parameterization on PCS 7 maintenance station clients</td>
<td>–</td>
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</tr>
</tbody>
</table>

**SIMATIC PDM overview of functions and features**

- **Product component is part of the product package**
- **Optional product component for the product package; order additive**
  - Product component is not relevant for the product package or not available

1) Not in stand-alone mode
COMMUNICATION AND SOFTWARE

SOFTWARE

SIMATIC PDM PROCESS DEVICE MANAGER

SIMATIC PDM STAND-ALONE PRODUCT RANGE

SIMATIC PDM SINGLE POINT V8.2

This minimum configuration with handheld functionality is designed for processing exactly one field device via point-to-point coupling. Additional functions or SIMATIC PDM TAGs are not possible. Upgrading to a different product variant, e.g. SIMATIC PDM Basic, or a different product version is also not possible. The device functions are supported as defined in the device description.

The following types of communication are possible:
- PROFIBUS DP/PA
- HART communication (modem, RS 232 and via PROFIBUS/PROFINET)
- Modbus
- Ethernet
- PROFINET

SIMATIC PDM BASIC V8.2

Provided the system requirements are met, SIMATIC PDM Basic can be used for stand-alone operation on any computer (IPC/notebook) with local connection to bus segments or direct connection to the device. The product package features all the basic functions required for operation and parameter assignment of the devices and is enabled for the following communication modes:
- PROFIBUS DP/PA
- HART communication (modem, RS 232 and via PROFIBUS/PROFINET)
- Modbus
- Ethernet
- PROFINET

As a basic block for individual configuration, SIMATIC PDM Basic can be upgraded with all functional SIMATIC PDM options as well as with cumulative sets of 10, 100 or 1 000 SIMATIC PDM TAGs. Without TAG expansion, SIMATIC PDM Basic is suitable for projects with up to 4 TAGs.

SIMATIC PDM SERVICE V8.2

The product package for mobile servicing applications can be executed on any computer (IPC/notebook) with a local connection to a bus segment or direct connection to the field devices. It comprises:
- PROFIBUS DP/PA
- HART communication (modem, RS 232 and via PROFIBUS/PROFINET)
- Modbus
- Ethernet
- PROFINET

SIMATIC PDM PCS 7 V8.2

The product package designed for use in a SIMATIC PCS 7 configuration environment requires the installation of SIMATIC PCS 7 V8.1. It comprises:
- SIMATIC PDM Basic (incl. 4 SIMATIC PDM TAGs)
- SIMATIC PDM Extended
- SIMATIC PDM routing in STEP 7/PCS 7
- 100 SIMATIC PDM TAGs

SIMATIC PDM PCS 7 SERVER V8.2

The product package designed for use in a SIMATIC PCS 7 configuration environment requires the installation of SIMATIC PCS 7 V8.1. It expands the functionality of SIMATIC PCS 7 by the SIMATIC PDM Server option. It is then possible to parameterize field devices integrated per Electronic Device Description (EDD) on any client of the SIMATIC PCS 7 Maintenance Station V8.1.

SIMATIC PDM PCS 7-FF V8.2

The product package designed for use in a SIMATIC PCS 7 configuration environment requires the installation of SIMATIC PCS 7 V8.1. It expands the functionality of SIMATIC PCS 7 by the SIMATIC PDM Communication FOUNDATION Fieldbus option. SIMATIC PDM can then also parameterize field devices on the FOUNDATION Fieldbus H1.
Optional product components

SIMATIC PDM Extended V8.2 option

The SIMATIC PDM Extended option enables you to unlock other system functions for SIMATIC PDM Basic and SIMATIC PDM, for example:

- Change log
- Calibration report
- Extended information in the Lifelist
- Export and import functions
- Print functions
- Document manager
- Comparison function

This functionality is already integrated in the product packages of category “SIMATIC PDM system-integrated” (SIMATIC PDM S7, SIMATIC PDM PCS 7, SIMATIC PDM PCS 7 Server, and SIMATIC PDM PCS 7-FF).

SIMATIC PDM integration option in STEP 7/PCS 7 V8.2

This option is used for the integration of SIMATIC PDM in a SIMATIC S7 or SIMATIC PCS 7 configuration environment. SIMATIC PDM can then be started directly from the hardware configurator (HW Config) in STEP 7/SIMATIC PCS 7.

This functionality is already integrated in the product packages of category “SIMATIC PDM system-integrated” (SIMATIC PDM S7, SIMATIC PDM PCS 7, SIMATIC PDM PCS 7 Server, and SIMATIC PDM PCS 7-FF).

SIMATIC PDM Routing V8.2 option

If SIMATIC PDM is used on an engineering station, the SIMATIC PDM Routing option enables handling of every device in the field that can be configured per EDD throughout the plant and across different bus systems and remote I/Os. SIMATIC PDM Routing is offered as an optional product component for SIMATIC PDM Basic, SIMATIC PDM Service, and SIMATIC PDM S7.

Routing is already integrated in SIMATIC PDM PCS 7, SIMATIC PDM PCS 7 Server, and SIMATIC PDM PCS 7-FF.

SIMATIC PDM Server V8.2 option

This option is intended for use of SIMATIC PDM in the SIMATIC PCS 7 Maintenance Station V8.1. Selected field devices can then be handled using the SIMATIC PDM configuration GUI on each client of the SIMATIC PCS 7 Maintenance Station V8.1.

SIMATIC PDM Communication FOUNDATION Fieldbus V8.2 option

In a SIMATIC S7/PCS 7 configuration environment, using this option SIMATIC PDM can communicate with field devices on the FOUNDATION Fieldbus H1 via the FF link.

This functionality is already integrated in the SIMATIC PDM PCS 7-FF product package.

SIMATIC PDM HART Server V8.2 option

This option permits the use of HART multiplexers from various vendors in SIMATIC PDM. Furthermore, wireless HART field devices can also be parameterized with SIMATIC PDM.

SIMATIC PDM Command Interface V8.2 option

SIMATIC PDM configurations for stand-alone operation, based on the SIMATIC PDM Basic or SIMATIC PDM Service product package, can be remote-controlled by this option with regard to configuration and field device operation.

Note: The SIMATIC PDM Command Interface option can only be used specific to a project. It is not envisaged for wide use. Programming knowledge is necessary.

SIMATIC PDM TAGs (version-independent)

Depending on the project size, the SIMATIC PDM TAGs supplied with a product package (except SIMATIC PDM Single Point) can be cumulatively expanded with sets of 10, 100 or 1 000 SIMATIC PDM TAGs.

A SIMATIC PDM TAG corresponds to a SIMATIC PDM object, which represents individual field devices or components within a project, e.g. measuring instruments, positioners, switching devices or remote I/Os. SIMATIC PDM TAGs are also relevant for diagnostics with the lifelist of SIMATIC PDM. In this case, TAGs are considered to be all recognized devices with diagnostics capability, whose detailed diagnostics is effected through the device description (EDD).

SIMATIC PDM Software Media Package V8.2

The current SIMATIC PDM installation software is offered without a license in the form of the SIMATIC PDM Software Media Package. Purchasing of corresponding software licenses is necessary to unlock the product-specific functionalities.

With SIMATIC PDM product packages, type of delivery “Package” (not with optional product components), a SIMATIC PDM Software Media Package is supplied together with each ordering item. Further SIMATIC PDM Software Media Packages must be ordered separately as required.

The software of the SIMATIC PDM Media Package without a license can be used for demonstration purposes in demo mode. The SIMATIC PDM functionality is limited as follows in demo mode:

- Stand-alone operation
- Storage functions disabled
- Export and import functions disabled
- Expanded functionality disabled
- Communication functions restricted

Information on ordering and delivery

SIMATIC PDM is among the products for which the installation software is provided in the form of a software media package. Software media packages and product-specific software licenses are separate packages, which are not merged into a single delivery unit when supplied in package form.

The number of delivered software media packages can be determined by the number of ordered items. You can find additional information in the ST PCS 7 catalog.
SIMATIC PDM Process Device Manager

**Function**

SIMATIC PDM, parameter view and trend window

**SIMATIC PDM core functions**
- Creation of project-specific device libraries
- Adjustment and modification of device parameters
- Comparing (e.g. project and device data)
- Plausibility testing of data input
- Device identification and testing
- Device status indication (operating modes, interrupts, states)
- Simulation
- Diagnostics (standard, detailed)
- Export/import (parameter data, logs, documents)
- Management (e.g. networks and PCs)
- Commissioning functions, e.g. measuring circuit tests of device data
- Lifecycle management functions, e.g. for device replacement
- Global and device-specific modification logbook for user operations (audit trail)
- Device-specific calibration reports
- Graphic presentations of echo envelope curves, trend displays, valve diagnosis results etc.
- Presentation of incorporated manuals
- Document manager for integration of up to 10 multimedia files

**Integration**

**Device integration**

SIMATIC PDM supports all devices described by EDD (Electronic Device Description). EDD is standardized to EN 50391 and IEC 61804. Internationally it is the most widely used standardized technology for device integration. At the same time, it is the guideline of the established organizations for
- PROFIBUS and PROFINET (PI – PROFIBUS & PROFINET International)
- HART (HCF: HART Communication Foundation)
- FF (Fieldbus Foundation)

The devices are integrated directly in SIMATIC PDM through a company-specific EDD or the current HCF or Fieldbus Foundation libraries. To achieve improved transparency, they can be managed in project-specific device libraries.

Field devices are described in the EDD in terms of functionality and construction using the Electronic Device Description Language (EDDL). Using this description, SIMATIC PDM automatically creates its user interfaces with the specific device data. Existing devices can be updated, and further devices integrated into SIMATIC PDM, by simply importing the manufacturer’s device-specific EDD.

Fieldbus Foundation provides pre-defined device descriptions (standard DD) for the basic functions of specific field device types. The basic functions are implemented using various standard function and transmission blocks.

**Technical support**

If you wish to use devices which cannot be found in the SIMATIC PDM device description library, we would be pleased to help you integrate them.

**Support Request**

You can request support by service specialists at Technical Support by using a "Support Request" on the Internet:

www.siemens.com/automation/support-request

**Contacts in the Region**

The Technical Support responsible for your Region can be found on the Internet at:

www.automation.siemens.com/partner

**Technical specifications**

**SIMATIC PDM V8.2**

- **Hardware**
  - PG/PC/notebook with processor corresponding to operating system requirements
  - Windows 7 Professional/Ultimate/Enterprise SP1 (32-bit/64-bit)
  - Windows Server 2008 R2 SP1 Standard Edition (64-bit)
- **Integration in STEP 7/PCS 7**
  - SIMATIC PCS 7 V8.1 (incl. update 1)
  - STEP 7 V5.5+SP4
## Ordering data

<table>
<thead>
<tr>
<th>SIMATIC PDM stand-alone product packages</th>
<th>Article No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minimum configuration</strong></td>
<td></td>
</tr>
<tr>
<td>SIMATIC PDM Single Point V8.2</td>
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</tr>
<tr>
<td>including 1 TAG; product package for operation and configuration of one field device; communication via PROFIBUS DP/PA, HART (modem, RS 232, PROFIBUS/PROFINET), Modbus, Ethernet or PROFINET</td>
<td></td>
</tr>
<tr>
<td>Additional functions or SIMATIC PDM TAGs are not possible</td>
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</tr>
<tr>
<td>6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit, floating license for 1 user</td>
<td></td>
</tr>
<tr>
<td>• Delivery form package (without SIMATIC PCS 7 Software Media Package) License key USB stick and certificate of license, bundled with 1 x SIMATIC PDM Software Media Package per ordering position</td>
<td></td>
</tr>
<tr>
<td>• Delivery form online (without SIMATIC PCS 7/SIMATIC PDM Software Media Package) License key download and online certificate of license</td>
<td></td>
</tr>
<tr>
<td>Notes: E-mail address required; installation software also available separately as SIMATIC PDM Software Media Package.</td>
<td>6ES7658-3HA28-0YA5</td>
</tr>
<tr>
<td></td>
<td>6ES7658-3HA28-0YH5</td>
</tr>
<tr>
<td><strong>Basic configuration for individual product packages</strong></td>
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<tr>
<td>SIMATIC PDM Basic V8.2</td>
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</tr>
<tr>
<td>including 4 TAGs; product package for operation and configuration of field devices and components; communication via PROFIBUS DP/PA, HART (modem, RS 232, PROFIBUS/PROFINET), Modbus, Ethernet or PROFINET 6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit, floating license for 1 user</td>
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<td>Notes: E-mail address required; installation software also available separately as SIMATIC PDM Software Media Package.</td>
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<td></td>
<td>6ES7658-3AB28-0YH5</td>
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</table>

## Configuration for mobile service

<table>
<thead>
<tr>
<th>SIMATIC PDM Service V8.2</th>
<th>Article No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product package for stand-alone user in service, with</td>
<td></td>
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<tr>
<td>• SIMATIC PDM Basic incl. 4 TAGs</td>
<td></td>
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<tr>
<td>• 100 TAGs</td>
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<tr>
<td>6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit, floating license for 1 user</td>
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<tr>
<td>• Delivery form package (without SIMATIC PCS 7 Software Media Package) License key USB stick and certificate of license, bundled with 1 x SIMATIC PDM Software Media Package per ordering position</td>
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</tr>
<tr>
<td>• Delivery form online (without SIMATIC PCS 7/SIMATIC PDM Software Media Package) License key download and online certificate of license</td>
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<tr>
<td>Notes: E-mail address required; installation software also available separately as SIMATIC PDM Software Media Package.</td>
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<td>6ES7658-3JD28-0YH5</td>
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</table>

## Configuration for integration in SIMATIC S7 configuration environment

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<thead>
<tr>
<th>SIMATIC PDM S7 V8.2</th>
<th>Article No.</th>
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</thead>
<tbody>
<tr>
<td>Product package for use in a SIMATIC S7 configuration environment, with</td>
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<tr>
<td>- SIMATIC PDM Basic incl. 4 TAGs</td>
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<tr>
<td>- SIMATIC PDM Extended</td>
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<tr>
<td>- SIMATIC PDM integration in STEP 7/PCS 7</td>
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<tr>
<td>- 100 TAGs</td>
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<tr>
<td>6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit, floating license for 1 user</td>
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</tr>
<tr>
<td>Note: STEP 7 V5.5+SP4 is required to use the full functionality of SIMATIC PDM S7 V8.2!</td>
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</tr>
<tr>
<td>• Delivery form package (without SIMATIC PCS 7 Software Media Package) License key USB stick and certificate of license, bundled with 1 x SIMATIC PDM Software Media Package per ordering position</td>
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<tr>
<td>• Delivery form online (without SIMATIC PCS 7/SIMATIC PDM Software Media Package) License key download and online certificate of license</td>
<td></td>
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<tr>
<td>Notes: E-mail address required; installation software also available separately as SIMATIC PDM Software Media Package.</td>
<td>6ES7658-3KD28-0YA5</td>
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<td>6ES7658-3KD28-0YH5</td>
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</table>
**SIMATIC PDM Process Device Manager**

**Configuration for integration in SIMATIC PCS 7 configuration environment**

**SIMATIC PDM PCS 7 V8.2**
Product package for integration into the engineering toolset of the SIMATIC PCS 7 engineering system

- 6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit
- Floating license for 1 user, with
  - SIMATIC PDM Basic incl. 4 TAGs
  - SIMATIC PDM Extended
  - SIMATIC PDM integration in STEP 7/PCS 7
  - SIMATIC PDM Routing
  - 100 TAGs

Note:
SIMATIC PCS 7 V8.1 is required to use the full functionality of SIMATIC PDM PCS 7 V8.2!

<table>
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<tr>
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**SIMATIC PDM PCS 7-FF V8.2**
Product package for integration into the engineering toolset of the SIMATIC PCS 7 engineering system

- 6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit
- Floating license for 1 user, with
  - SIMATIC PDM Basic incl. 4 TAGs
  - SIMATIC PDM Extended
  - SIMATIC PDM integration in STEP 7/PCS 7
  - SIMATIC PDM Routing
  - SIMATIC PDM Communication FOUNDATION Fieldbus
  - 100 TAGs

Note:
SIMATIC PCS 7 V8.1 is required to use the full functionality of SIMATIC PDM PCS 7-FF V8.2!

<table>
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<tr>
<th>6ES7658-3MD28-0YA5</th>
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**SIMATIC PDM PCS 7 Server V8.2**
Product package for integration into the engineering toolset of the SIMATIC PCS 7 engineering system

- 6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit
- Floating license for 1 user, with
  - SIMATIC PDM Basic incl. 4 TAGs
  - SIMATIC PDM Extended
  - SIMATIC PDM integration in STEP 7/PCS 7
  - SIMATIC PDM Routing
  - SIMATIC PDM Server
  - 100 TAGs

Note:
SIMATIC PCS 7 V8.1 is required to use the full functionality of SIMATIC PDM PCS 7 Server V8.2!

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<tr>
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## Optional product components for SIMATIC PDM V8.2

<table>
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<tr>
<th>Name</th>
<th>Languages</th>
<th>Operating System</th>
<th>Floating License for</th>
<th>Delivery Form</th>
<th>License Key and Certificate of License</th>
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<tr>
<td>SIMATIC PDM Extended V8.2</td>
<td>6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit, floating license for 1 user</td>
<td>- Delivery form package (without SIMATIC PCS 7/SIMATIC PDM Software Media Package)</td>
<td>- License key USB stick and certificate of license</td>
<td>- Note: E-mail address required!</td>
<td>- License key USB stick and certificate of license</td>
</tr>
<tr>
<td>SIMATIC PDM Integration in STEP 7/SIMATIC PCS 7 V8.2</td>
<td>6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit, floating license for 1 user</td>
<td>- Delivery form package (without SIMATIC PCS 7/SIMATIC PDM Software Media Package)</td>
<td>- License key USB stick and certificate of license</td>
<td>- Note: E-mail address required!</td>
<td>- License key USB stick and certificate of license</td>
</tr>
<tr>
<td>SIMATIC PDM Routing V8.2</td>
<td>6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit, floating license for 1 user</td>
<td>- Delivery form package (without SIMATIC PCS 7/SIMATIC PDM Software Media Package)</td>
<td>- License key USB stick and certificate of license</td>
<td>- Note: E-mail address required!</td>
<td>- License key USB stick and certificate of license</td>
</tr>
</tbody>
</table>

## SIMATIC PDM Server V8.2

6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit, floating license for 1 user

- Delivery form package (without SIMATIC PCS 7/SIMATIC PDM Software Media Package) | License key USB stick, certificate of license
- Delivery form online (without SIMATIC PCS 7/SIMATIC PDM Software Media Package) | License key download and online certificate of license

Note: E-mail address required!

## SIMATIC PDM Communication FOUNDATION Fieldbus V8.2

6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit, floating license for 1 user

- Delivery form package (without SIMATIC PCS 7/SIMATIC PDM Software Media Package) | License key USB stick, certificate of license
- Delivery form online (without SIMATIC PCS 7/SIMATIC PDM Software Media Package) | License key download and online certificate of license

Note: E-mail address required!

## SIMATIC PDM HART Server V8.2

6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit, floating license for 1 user

- Delivery form package (without SIMATIC PCS 7/SIMATIC PDM Software Media Package) | License key USB stick, certificate of license
- Delivery form online (without SIMATIC PCS 7/SIMATIC PDM Software Media Package) | License key download and online certificate of license

Note: E-mail address required!
# Communication and Software

## SIMATIC PDM Process Device Manager

### SIMATIC PDM Command Interface V8.2

- 6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit, floating license for 1 user
- Delivery form package
- (without SIMATIC PCS 7/SIMATIC PDM Software Media Package)
- License key USB stick and certificate of license

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>6ES7658-3SX28-2YB5</td>
<td>SIMATIC PDM Command Interface V8.2</td>
</tr>
</tbody>
</table>

### SIMATIC PDM TAGs

- TAG licenses for expanding the available TAG volume, cumulative, software class A, floating license for 1 user
- Delivery form package
- License key on USB stick and certificate of license
- - 10 TAGs
- - 100 TAGs
- - 1,000 TAGs

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
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<tbody>
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<td>6ES7658-3XC00-2YB5</td>
<td>TAG licenses for expanding the available TAG volume, cumulative</td>
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<td>6ES7658-3XD00-2YB5</td>
<td>TAG licenses for expanding the available TAG volume, cumulative</td>
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<tr>
<td>6ES7658-3XE00-2YB5</td>
<td>TAG licenses for expanding the available TAG volume, cumulative</td>
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</tbody>
</table>

### SIMATIC PDM Software Media Package

- Installation software without license, 6 languages (English, German, French, Italian, Spanish, Chinese), software class A, runs with Windows 7 Ultimate 32/64-bit or Windows Server 2008 R2 Standard 64-bit
- Note: Can only be used in conjunction with a valid license or in demo mode!

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>6ES7658-3GX28-0YT8</td>
<td>SIMATIC PDM Software Media Package V8.2</td>
</tr>
<tr>
<td>6ES7658-3GX28-0YG8</td>
<td>SIMATIC PDM Software Media Package V8.2</td>
</tr>
</tbody>
</table>

### More information

#### Update/Upgrade

Product packages and optional product components from the product range of SIMATIC PDM V6.0, V6.1, V8.0 or V8.1 (incl. service pack) can be directly upgraded to V8.2 using upgrade packages.

Product packages and optional product components from the product range of SIMATIC PDM V7.0 can first be upgraded to V8.0 and then to V8.2.

When upgrading to SIMATIC PDM V8.2, be aware of the compatible versions of SIMATIC PCS 7 and STEP 7.

A Software Update Service in the form of a subscription is also offered for SIMATIC PDM.

For further information, see catalog ST PCS 7.
The following field instruments are currently available in SITRANS DTM:

- SITRANS TH300 HART
- SITRANS TH400 PA
- SITRANS P300 HART
- SITRANS P500
- SITRANS P DSIII HART
- SITRANS F M MAG 6000 DP/PA
- SITRANS F C MASS 6000 PA/PA
- SITRANS FC430
- SITRANS PROBE LU 6 m, 12 m, HART
- SITRANS LR200 HART, PA
- SITRANS LR250 HART, PA
- SITRANS LR260 HART, PA
- SITRANS LR560 HART, PA
- SITRANS LUT400 HART
- SIPART PS2 HART, PA, FF

**Technical specifications**

<table>
<thead>
<tr>
<th>SITRANS DTM</th>
<th>Version</th>
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<tbody>
<tr>
<td>Current Version</td>
<td>3.1</td>
</tr>
<tr>
<td>Compatible with PACTware versions</td>
<td>3.6, 4.0, 4.1</td>
</tr>
<tr>
<td>Compatible with Windows</td>
<td>XP, 7</td>
</tr>
<tr>
<td>Certified by FDT group</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Free DTM software can be downloaded from: [http://www.siemens.com/sitransdtm](http://www.siemens.com/sitransdtm)

Click on Support in the collateral list on the right side of the web page, and choose Software downloads.

SITRANS DTM uses EDDs as the device description and provides the DTM interface to allow the integration of our field instruments into FDT-frame applications.
The SITRANS Library for SIMATIC PCS 7 V8.0 and higher extends standard functionality of the SIMATIC PCS 7 process control system concentrated in the SIMATIC PCS 7 Advanced Process Library (APL) with technological blocks and faceplates for device-specific functions of the SITRANS field devices.

**Benefits**

This allows you to easily operate all device functions, such as the dosing of the SITRANS FM MAG 6000, in a single faceplate. In addition, it also supports operation and monitoring via Touch Panels as well as the integration in SIMATIC S7 applications. The SITRANS Library is based on the modern design of the Advanced Process Library (APL). Together with the APL, the SITRANS Library enables you to create harmonic solutions with a consistent look & feel and optimum use of the functions of the SITRANS field devices in many industries.

It helps accelerate the engineering process, reduces the time-to-market, and simplifies process control. In addition, operator functions (such as "Dosing") and process-related diagnostic information (such as empty pipe detection and flow direction) are provided.

Note:

SITRANS Library can be used in combination with SIMATIC PCS 7 version V8.0 and higher.

**Application**

The SITRANS Library can be used in combination with SIMATIC PCS 7 and SITRANS field devices.

You can find the current list of the SITRANS field devices and the supported SIMATIC PCS 7 versions at http://support.automation.siemens.com/WW/view/en/85285872

The SITRANS Library can be used for all core sectors of the process industry. These are:

- Chemical industry
- Pharmaceutical industry
- Water and wastewater
- Glass and solar
- Oil & gas
- Food and beverage industry
- Minerals and mining

**Design**

The product structure, however, is geared toward the operational environment in the SIMATIC PCS 7 process control system. Consequently, SITRANS Library is offered in the form of an engineering component:

- SITRANS Library
  - Engineering software with engineering license for one customer plant
- SITRANS Library
  - Runtime license for one automation system (SIMATIC PCS 7 automation systems of all designs and S7-300 controllers)

The SITRANS Library product component enables you to perform configuration work on a SIMATIC PCS 7 engineering station.

The SITRANS Library product component allows you to run blocks from a library on an automation system. When using function blocks from SITRANS Library in SIMATIC PCS 7 automation systems, note that SIMATIC PCS 7 AS Runtime POs are also booked.

**Function**

**SITRANS Library for SIMATIC PCS 7**

Sublibrary for the functional expansion of the SIMATIC PCS 7 Advanced Process Library with:

- Function blocks and faceplates for the SITRANS FM MAG 6000 DP with dosing function for SIMATIC S7-400, SIMATIC S7-300 and panel interface blocks
- Function blocks and faceplates for SITRANS field devices for SIMATIC S7-400 and SIMATIC S7-300 with WinCC.

The function blocks are configured in CFC.

Control and monitoring from a panel is configured with the panel interface blocks for example for the SITRANS FM MAG 6000 DP. Taking operating rights and hierarchical operating concepts (multi-control room operation) into consideration, the technological function can then be operated from both an operator station and a Touch Panel.

Detailed information for which field devices which systems and system versions are supported and about free-of-charge downloads see under: http://support.automation.siemens.com/WW/view/en/85285872

**Selection and Ordering Data**

**SITRANS Library**

Block library for SIMATIC PCS 7 V8.0 and higher and SIMATIC S7 with function blocks and face plates as well as electronic documentation

- Engineering software, software class A, two languages (English, German), runs under operation system Windows XP Professional 32 Bit, Windows 7 Ultimate 32/64 Bit, Windows Server 2003 R2 Standard 32 Bit or Windows Server 2008 R2 Standard 64 Bit, single license for 1 installation
- Engineering license for one customer plant.

Delivery form: can be downloaded, with certificate of license

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