SIMATIC

S7-1500/ET 200MP
CM PtP RS422/485 BA
communication module
(6ES7540-1AB00-0AA0)
Manual
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.

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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.

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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.
Preface

Purpose of the documentation


Conventions

This documentation contains figures of the described device. The figures may differ slightly from the devices supplied.

Please also observe notes marked as follows:

---

**Note**

A note contain important information on the product described in the documentation, on the handling of the product and on the section of the documentation to which particular attention should be paid.

---

Note on IT security

Siemens offers IT security mechanisms for its automation and drive product portfolio in order to support the safe operation of the plant/machine. We recommend that you inform yourself regularly on the IT security developments regarding your products. You can find information on this on the Internet (http://support.automation.siemens.com).

You can register for a product-specific newsletter here.

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<th>Page</th>
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</tr>
<tr>
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<td>27</td>
</tr>
</tbody>
</table>
Introduction

This modular documentation of the SIMATIC products covers diverse topics concerning your automation system.

The complete documentation for the S7-1500 and ET 200MP automation systems consists of system manuals, function manuals and manuals.

The STEP 7 information system (Online Help) also helps you configure and program your automation system.

Overview of the documentation provided for the CM PtP RS422/485 BA communication module

The following table lists additional references that you will need when using the CM PtP RS422/485 BA communication module.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Documentation</th>
<th>Key content</th>
</tr>
</thead>
</table>
• Installation  
• Connecting  
• Addressing  
• Commissioning  
• Maintenance |
• Interrupt, error and system messages  
• Technical specifications  
• Dimensional drawing |
• Electromagnetic compatibility  
• Lightning protection |
**Documentation guide**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Documentation</th>
<th>Key content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point-to-point communication</td>
<td>Function manual CM PtP - Configurations for point-to-point connections (<a href="http://support.automation.siemens.com/WW/view/en/59057093">http://support.automation.siemens.com/WW/view/en/59057093</a>)</td>
<td>• Basic information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Data transmission functions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Diagnostics functions</td>
</tr>
</tbody>
</table>

**SIMATIC manuals**

All current manuals for the SIMATIC products are available for download free of charge on the Internet (http://www.siemens.com/automation/service&support).
Product overview

2.1 Properties

Order number

6ES7540-1AB00-0AA0

View of the module

Figure 2-1 CM PtP RS422/485 BA view
## Properties

The communication module has the following properties:

- **Technical properties**
  - RS422/485 interface
  - short-circuit proof
  - electrically disconnected
  - Protocols: 3964(R), Freeport and USS with instructions

- **Supported system functions**
  - Firmware update
  - Identification data I&M0
  - Parameter re-assignment in CPU RUN mode (using instructions)
  - Diagnostic interrupts

### Additional information

Additional information on the properties of the CM PtP RS422/485 BA can be found in the function manual CM PtP - Configurations for point-to-point connections ([http://support.automation.siemens.com/WW/view/en/59057093](http://support.automation.siemens.com/WW/view/en/59057093)).

Additional information on the properties of the S7-1500 and associated modules can be found in the system manual S7 -1500 Automation System ([http://support.automation.siemens.com/WW/view/en/59191792](http://support.automation.siemens.com/WW/view/en/59191792)).
2.2 Accessories

Scope of delivery

The scope of delivery of the communication module includes a U connector for connection to the backplane bus.

Connecting cables

Connecting cables are available in the standard lengths: 5 m, 10 m and 50 m (each with a 15-pin sub D connector).

<table>
<thead>
<tr>
<th>Connecting cables for CM PtP RS422/485 BA</th>
<th>Type</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM PtP RS422/485 HF</td>
<td>X27 (RS 422), 5 m</td>
<td>6ES7902-3AB00-0AA0</td>
</tr>
<tr>
<td></td>
<td>X27 (RS 422), 10 m</td>
<td>6ES7902-3AC00-0AA0</td>
</tr>
<tr>
<td></td>
<td>X27 (RS 422), 50 m</td>
<td>6ES7902-3AG00-0AA0</td>
</tr>
</tbody>
</table>

Online catalog

Additional order numbers for S7-1500 can be found on the Internet (http://www.siemens.com/industrymall) in the online catalog and online ordering system.
2.3 Functions

Introduction

The communication module allows you to exchange data between your own and other programmable controllers or computers by means of a point-to-point connection, and to connect various devices from a variety of manufacturers.

Functionality of the CM PtP RS422/485 BA

The CM PtP RS422/485 BA communication module offers the following functionality:

- RS422/485 interface
- Data transmission rate: 300 to 19200 bps
- Maximum frame length: 1 kbyte
- Transmission protocols: Freeport and 3964(R)

Note

The USS protocol can be implemented with instructions included in STEP 7 (TIA Portal).

Hardware components of a point-to-point connection

You require certain hardware components for a point-to-point connection with the CM PtP RS422/485 BA.

<table>
<thead>
<tr>
<th>Components</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central processor unit (CPU)</td>
<td>... executes the user program.</td>
</tr>
<tr>
<td>Accessories: Memory card</td>
<td></td>
</tr>
<tr>
<td>CM PtP RS422/485 BA communication module</td>
<td>... communicates with a communication partner (point-to-point) by means of the interface.</td>
</tr>
<tr>
<td>Connecting cable</td>
<td>... connects the CM PtP RS422/485 BA communication module with the communication partner.</td>
</tr>
<tr>
<td>U connector</td>
<td>... provides the mechanical and electrical connection between the modules.</td>
</tr>
<tr>
<td>Optional: Power supply module (PS)</td>
<td>... converts the line voltage (120/230 VAC or 24 VDC) into the operating voltage of 15 VDC required for supply of the S7-1500.</td>
</tr>
</tbody>
</table>
System environment

The communication module can be used in the following system environments:

<table>
<thead>
<tr>
<th>Applications</th>
<th>Components required</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central operation in an S7-1500</td>
<td>• CPU 151x&lt;br&gt;• CM PtP RS422/485 BA&lt;br&gt;• Power supply (optional)</td>
<td>STEP 7 (TIA Portal)</td>
</tr>
<tr>
<td>system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributed operation in an S7-1500</td>
<td>• CPU 151x&lt;br&gt;• IM 155-5&lt;br&gt;• CM PtP RS422/485 BA&lt;br&gt;• Power supply (optional)</td>
<td>STEP 7 (TIA Portal)</td>
</tr>
<tr>
<td>system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributed operation in an S7-300/400</td>
<td>• CPU 31x / CPU 41x&lt;br&gt;• IM 155-5&lt;br&gt;• CM PtP RS422/485 BA</td>
<td>STEP 7 (TIA Portal)&lt;br&gt;STEP 7 with integration of a GSD file</td>
</tr>
<tr>
<td>system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributed operation in a third-party</td>
<td>• Third-party programmable controller&lt;br&gt;• IM 155-5&lt;br&gt;• CM PtP RS422/485 BA</td>
<td>GSD file imported to/installed in the engineering system 1)</td>
</tr>
<tr>
<td>system</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) Information on using the communication module in a third-party system is available in the programming and operating manual CM PtP operation with PROFINET controller (http://support.automation.siemens.com/WW/view/en/59062563).

Additional information

Information on configuring and programming the CM PtP RS422/485 BA communication module is available in the function manual CM PtP - Configurations for point-to-point connections (http://support.automation.siemens.com/WW/view/en/59057093).
2.4 Properties of the RS422/485 interface

Definition

The RS422/485 (X27) interface is a differential voltage interface for serial data transmission.

Properties

The RS422/485 (X27) interface has the following properties and meets the following requirements:

<table>
<thead>
<tr>
<th>Type</th>
<th>Differential voltage interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front connector:</td>
<td>15-pin sub-D female connector, with screw lock</td>
</tr>
<tr>
<td>RS422 signals:</td>
<td>T (A), R (A), T (B), R (B), GND; isolated</td>
</tr>
<tr>
<td>RS485 signals:</td>
<td>R/T (A), R/T (B), GND; all signals isolated against backplane bus and load voltage</td>
</tr>
<tr>
<td>Max. data transmission rate:</td>
<td>19.2 kbps</td>
</tr>
<tr>
<td>Max. cable length:</td>
<td>1200 m; cable type LIYCY 3 x 2 x 0.14. T(A)/T(B) and R(A)/R(B) twisted in pairs</td>
</tr>
<tr>
<td>Standard:</td>
<td>DIN 66259 Parts 1 and 3, EIA-RS422/485, CCITT V.11</td>
</tr>
</tbody>
</table>
3.1 RS422/485 (X27) interface of the communication module

Terminal assignment

The table below shows the terminal assignment for the 15-pin sub D female connector in the front panel of the communication module.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Designation</th>
<th>Input/output</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>T (A) -</td>
<td>Output</td>
<td>Send data (four-wire mode)</td>
</tr>
<tr>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>R (A)/T (A)</td>
<td>Input</td>
<td>Receive data (four-wire mode)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Input/output</td>
<td>Receive/send data (two-wire mode)</td>
</tr>
<tr>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>GND</td>
<td>-</td>
<td>Functional ground (isolated)</td>
</tr>
<tr>
<td>9</td>
<td>T (B) +</td>
<td>Output</td>
<td>Send data (four-wire mode)</td>
</tr>
<tr>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>R (B)/T (B)</td>
<td>Input</td>
<td>Receive data (four-wire mode)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Input/output</td>
<td>Receive/send data (two-wire mode)</td>
</tr>
<tr>
<td>12</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>15</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* View from the front
Connecting

3.2 Installation guidelines

Connecting cables

Standard connecting cables of various lengths (see chapter Accessories (Page 11)) are available for connection with a communication partner which also has a 15-pin sub-D female connector.

Please note that you must only use shielded connector casings and cables. A large surface area of the cable shield must be in contact with the connector casing on both sides.

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cable shield - GND</strong></td>
</tr>
<tr>
<td>Never connect the cable shield to the GND, as this could destroy the modules. GND (pin 8) must always be connected on both sides, as this could otherwise also destroy the modules.</td>
</tr>
</tbody>
</table>

3.2 Installation guidelines

To take into consideration

The general installation guidelines must be taken into consideration (see function manual EMC/EMI compatible installation of control systems (http://support.automation.siemens.com/WW/view/en/59193566)).

The cable shield must be installed on a grounding rail to maintain the EMC values (electromagnetic compatibility).
Parameters/address space

4.1 Parameter assignment

Introduction

You configure and assign the parameters of the communication module with STEP 7 (TIA Portal V12 or later) or with STEP 7 with integration of a GSD file.

Additional information

The device manual of the communication module is supplemented by the function manual CM PnP - Configurations for point-to-point connections (http://support.automation.siemens.com/WW/view/en/59057093) and the TIA Portal information system.

There you will find information on the following topics:

- Operating modes
- Receive buffer
- Data flow control
- Transmission integrity
- Data transmission - protocol specific
- Programming/configuring in STEP 7 (TIA Portal)
- Module-specific instructions
- Diagnostics

4.2 Reaction to CPU STOP

Ongoing transmissions are aborted when the higher-level control (CPU) goes to STOP. Frames in the receive buffer are retained. With a corresponding configuration in the properties dialog of the communication module, you can automatically clear the receive buffer on the communication module during CPU startup.
4.3 Address space

Address space of the communication module

The input addresses of the communications module total 8 bytes. The input addresses are automatically assigned for each communications module when you specify the device configuration in STEP 7 (TIA Portal). Output addresses are not required.

Hardware identification (not freely configurable)

The hardware identification (HW ID) is automatically assigned for each communications module when you specify the device configuration in STEP 7 (TIA Portal).

The hardware ID is issued along with the diagnostic messages to localize the module. In addition, the HW identification is required for S7-1500 at the communication instructions in order to identify the communication module. For S7-300/400, the communication module is identified by the start address of the input data.
Overview of the instructions

Communication between the CPU, the communication module and a communication partner takes place by means of special instructions and protocols that support the corresponding communication modules. The instructions process the exchange of data between the CPU and the communication module. They must be called cyclically from the user program. Data transmission takes place asynchronously across several cycles.

The transmission protocols are implemented on the communication module. The protocol is used to adapt the interface of the communication module to the interface of the communication partner.

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port_Config</td>
<td>You use the Port_Config instruction to dynamically assign basic interface parameters.</td>
</tr>
<tr>
<td>Send_Config</td>
<td>You use the Send_Config (send configuration) instruction to dynamically assign serial send parameters of a protocol.</td>
</tr>
<tr>
<td>Receive_Config</td>
<td>You use the Receive_Config (receive configuration) instruction to dynamically assign serial receive parameters of a protocol.</td>
</tr>
<tr>
<td>P3964_Config</td>
<td>You use the P3964_Config (protocol configuration) instruction to dynamically assign the parameters of the 3964(R) procedure.</td>
</tr>
<tr>
<td>Send_P2P</td>
<td>You use the Send_P2P instruction to send data to a communication partner.</td>
</tr>
<tr>
<td>Receive_P2P</td>
<td>You use the Receive_P2P instruction to receive data from a communication partner.</td>
</tr>
<tr>
<td>Receive_Reset</td>
<td>You use the Receive_Reset instruction to delete the receive buffer of the communication module.</td>
</tr>
<tr>
<td>Get_Features</td>
<td>You use the Get_Features instruction to read expanded functions supported by the communication module.</td>
</tr>
<tr>
<td>Set_Features</td>
<td>You use the Set_Features instruction to set expanded functions supported by the communication module.</td>
</tr>
<tr>
<td>USS_Port_Scan</td>
<td>You use the USS_Port_Scan instruction to communicate using the USS.</td>
</tr>
<tr>
<td>USS_Drive_Control</td>
<td>You use the USS_Drive_Control instruction to exchange data with a drive.</td>
</tr>
<tr>
<td>USS_Read_Param</td>
<td>You use the USS_Read_Param instruction to read parameters from the drive.</td>
</tr>
<tr>
<td>USS_Write_Param</td>
<td>You use the USS_Write_Param instruction to change parameters in the drive.</td>
</tr>
</tbody>
</table>

The instructions are part of STEP 7 (TIA Portal). The instructions are available in the "Instructions" task card under Communication > Communication processor.
Additional information

Additional information on programming the communication modules can be found in the function manual CM PtP - Configurations for point-to-point connections (http://support.automation.siemens.com/WW/view/en/59057093).
LED displays of the communication module

The figure below shows the LED displays of the CM PtP RS422/485 BA communication module with open front panel.

Figure 6-1 CM PtP RS422/485 BA view
### Meaning of the LED displays for RUN/ERROR/(MAINT)

<table>
<thead>
<tr>
<th>LED</th>
<th>Meaning</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Supply voltage not present or too low at</td>
<td>Check the power supply of the station.</td>
</tr>
<tr>
<td>Off</td>
<td>communication module</td>
<td></td>
</tr>
<tr>
<td>Flashes</td>
<td>CM in startup, parameters not assigned yet</td>
<td>---</td>
</tr>
<tr>
<td>On</td>
<td>CM configured and ready for operation</td>
<td>---</td>
</tr>
<tr>
<td>On</td>
<td>Group error (at least one error pending)</td>
<td>Evaluate the diagnostics data and eliminate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the error. 1)</td>
</tr>
</tbody>
</table>

1) Information on startup and diagnostics of the communication module is available in the function manual CM PtP - Configurations for point-to-point connections ([http://support.automation.siemens.com/WW/view/en/59057093](http://support.automation.siemens.com/WW/view/en/59057093)).

### Meaning of LED displays for TXD/RXD (under the front panel)

<table>
<thead>
<tr>
<th>LED</th>
<th>Meaning</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashes</td>
<td>Interface is transmitting</td>
<td>---</td>
</tr>
<tr>
<td>Off</td>
<td>Interface is receiving</td>
<td>---</td>
</tr>
</tbody>
</table>

---

CM PtP RS422/485 BA communication module (6ES7540-1AB00-0AA0)

Manual, 01/2013, A5E03777484-01
# Technical specifications

<table>
<thead>
<tr>
<th>Product type designation</th>
<th>6ES7540-1AB00-0AA0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General information</strong></td>
<td>CM PtP RS422/485 BA</td>
</tr>
<tr>
<td>• I&amp;M data</td>
<td>Yes; I&amp;M 0</td>
</tr>
<tr>
<td>Engineering with</td>
<td>V12.0 / V12.0</td>
</tr>
<tr>
<td>STEP 7 TIA Portal can be configured/integrated as of version</td>
<td>V5.5 SP2 or higher with a GSD file</td>
</tr>
<tr>
<td>STEP 7 can be configured/integrated as of version</td>
<td>- / -</td>
</tr>
<tr>
<td>PROFIBUS as of GSD version/GSD revision</td>
<td>V2.3</td>
</tr>
<tr>
<td>PROFINET as of GSD version/GSD revision</td>
<td>- / -</td>
</tr>
<tr>
<td><strong>Installation type/mounting</strong></td>
<td>Yes; S7-1500 mounting rail</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>System power supply</td>
</tr>
<tr>
<td>Voltage type of supply voltage</td>
<td></td>
</tr>
<tr>
<td>Input current</td>
<td>33 mA; from backplane bus</td>
</tr>
<tr>
<td>• Current consumption (rated value)</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>0.65 W</td>
</tr>
<tr>
<td>• Power from the backplane bus</td>
<td></td>
</tr>
<tr>
<td>Power loss</td>
<td>0.6 W</td>
</tr>
<tr>
<td>• Power loss, typ.</td>
<td></td>
</tr>
<tr>
<td>Address area</td>
<td>8 bytes</td>
</tr>
<tr>
<td>Occupied address area</td>
<td></td>
</tr>
<tr>
<td>Inputs</td>
<td></td>
</tr>
<tr>
<td>Interfaces</td>
<td></td>
</tr>
<tr>
<td>1. Interface</td>
<td></td>
</tr>
<tr>
<td>Interface hardware</td>
<td></td>
</tr>
<tr>
<td>• RS 422</td>
<td>Yes</td>
</tr>
<tr>
<td>• RS 485</td>
<td>Yes</td>
</tr>
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</table>
### Technical specifications

<table>
<thead>
<tr>
<th></th>
<th>6ES7540-1AB00-0AA0</th>
</tr>
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<tbody>
<tr>
<td><strong>Interface hardware</strong></td>
<td></td>
</tr>
<tr>
<td>RS 485</td>
<td>19.2 kbps</td>
</tr>
<tr>
<td></td>
<td>1200 m</td>
</tr>
<tr>
<td>RS 422</td>
<td>19.2 kbps</td>
</tr>
<tr>
<td></td>
<td>1200 m</td>
</tr>
<tr>
<td>• Transmission rate, max.</td>
<td></td>
</tr>
<tr>
<td>• Max. cable length</td>
<td></td>
</tr>
<tr>
<td>• 4-wire full duplex connection</td>
<td>Yes</td>
</tr>
<tr>
<td>• 4-wire multipoint connection</td>
<td>No</td>
</tr>
<tr>
<td><strong>Protocols</strong></td>
<td></td>
</tr>
<tr>
<td>Integrated protocols</td>
<td>Freeport</td>
</tr>
<tr>
<td>• Frame length, max.</td>
<td>1 kbyte</td>
</tr>
<tr>
<td>• Bits per character</td>
<td>7 or 8</td>
</tr>
<tr>
<td>• Number of stop bits</td>
<td>1 or 2 bits</td>
</tr>
<tr>
<td>• Parity</td>
<td>None, even, odd, always 1, always 0, any</td>
</tr>
<tr>
<td>3964 (R)</td>
<td></td>
</tr>
<tr>
<td>• Frame length, max.</td>
<td>1 kbyte</td>
</tr>
<tr>
<td>• Bits per character</td>
<td>7 or 8</td>
</tr>
<tr>
<td>• Number of stop bits</td>
<td>1 or 2 bits</td>
</tr>
<tr>
<td>• Parity</td>
<td>None, even, odd, always 1, always 0, any</td>
</tr>
<tr>
<td><strong>Frame buffer</strong></td>
<td></td>
</tr>
<tr>
<td>• Buffer memory for frames</td>
<td>2 kbyte</td>
</tr>
<tr>
<td>• Number of frames which can be buffered</td>
<td>255</td>
</tr>
<tr>
<td><strong>Interrupts/diagnostics/status information</strong></td>
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</tr>
<tr>
<td>Interrupts</td>
<td></td>
</tr>
<tr>
<td>• Diagnostic interrupt</td>
<td>Yes</td>
</tr>
<tr>
<td>• Hardware interrupt</td>
<td>No</td>
</tr>
<tr>
<td>Diagnostic messages</td>
<td></td>
</tr>
<tr>
<td>Diagnostics</td>
<td></td>
</tr>
<tr>
<td>• Wire break</td>
<td>Yes</td>
</tr>
<tr>
<td>Diagnostics display LED</td>
<td></td>
</tr>
<tr>
<td>• RUN LED</td>
<td>Yes; green LED</td>
</tr>
<tr>
<td>• ERROR LED</td>
<td>Yes; red LED</td>
</tr>
<tr>
<td>• Receive RxD</td>
<td>Yes; yellow LED</td>
</tr>
<tr>
<td>• Send TxD</td>
<td>Yes; yellow LED</td>
</tr>
<tr>
<td>Specifications</td>
<td>6ES7540-1AB00-0AA0</td>
</tr>
<tr>
<td>--------------------------------</td>
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<td><strong>Technical specifications</strong></td>
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<tr>
<td><strong>CM PiP RS422/485 BA communication module (6ES7540-1AB00-0AA0)</strong></td>
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</tr>
<tr>
<td><strong>Manual, 01/2013, A5E03777484-01</strong></td>
<td></td>
</tr>
</tbody>
</table>

| **Electrical isolation**       |                   |
|                               | • between backplane bus and interface | Yes |

| **Insulation**                 |                   |
|                               | Insulation tested with | 707 V DC |

| **Ambient conditions**         |                   |
|                               | Operating temperature |                   |
|                               | • Horizontal installation, min. | 0 °C |
|                               | • Horizontal installation, max. | 60 °C |
|                               | • Vertical installation, min. | 0 °C |
|                               | • Vertical installation, max. | 40 °C |

| **Distributed operation**      |                   |
|                               | • At SIMATIC S7-300 | Yes |
|                               | • At SIMATIC S7-400 | Yes |
|                               | • At SIMATIC S7-1500 | Yes |
|                               | • At Standard Profinet Controller | Yes |
|                               | • Supports Fast Startup | Yes |

| **Dimensions**                 |                   |
|                               | • Width | 35 mm |
|                               | • Height | 147 mm |
|                               | • Depth | 127 mm |

| **Weights**                    |                   |
|                               | • Weight, approx. | 0.22 kg |

This appendix contains the dimensional drawing of the communication module installed on a mounting rail and with a shield bracket. Always observe the specified dimensions for installation in cabinets, control rooms, etc.

Figure A-1  Dimensional drawing of the CM PtP RS422/485 BA communication module
Dimensional drawing

Figure A-2  Dimensional drawing of the CM PtP RS422/485 BA communication module with open front panel