

## SIMATIC NET

### Program blocks

### Version history of the SIMATIC NET program blocks for SIMATIC S7 CPs

#### Reference Manual

#### Preface

SIMATIC S7-300

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SIMATIC S7-400

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SIMATIC S7-1200

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SIMATIC S7-1500

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## Legal information

### Warning notice system

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

#### **DANGER**

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

#### **WARNING**

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

#### **CAUTION**

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

#### **NOTICE**

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

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

### Qualified Personnel

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

### Proper use of Siemens products

Note the following:

#### **WARNING**

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

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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

## Information on this document

This document provides you with information on the current program blocks and on program blocks that were previously available along with their versions and a brief description.

## Validity of the document

The information in this document includes the program block versions up to the following versions of the configuration software, depending on the device family:

- **S7-300/400**
  - STEP 7 V5.5 SP4 + HF8
  - STEP 7 Professional V13.0 + SP1 + Update 6
- **S7-1200/1500**
  - STEP 7 Professional V13.0 + Update 4

## New in this release

- Information on migration of the program blocks to STEP 7 Professional
- Editorial revision

## Layout

For each program block, there is a table that informs you of the previously available block versions.

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### Note

#### Current block version always at the top of the table

The tables are structured so that the current block version is always at the top of the table. The version number of the current block version is also indicated using the following convention: **>>n.0<<**

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Layout of the tables / example:

| Version                    | CP type | STEP 7 version | Remarks        | Reason for change | Bugs fixed     | Enhanced functions                                                             |
|----------------------------|---------|----------------|----------------|-------------------|----------------|--------------------------------------------------------------------------------|
| <b>&gt;&gt;4.0&lt;&lt;</b> | IE      | V5.1+SP2+HF1   | Migration: _OK | BF                | Status display |                                                                                |
| 3.0                        | IE      | V5.1           | Migration: _LF | X                 |                | Enhanced protocol to ensure compatibility between new and older CP generation. |

## Migration of program blocks to STEP 7 Professional

If you want to migrate projects containing the program blocks from STEP 7 V5.x to STEP 7 Professional, note that not all program blocks are fully compatible in both STEP 7 versions. While some blocks / block versions can be migrated to configurable program blocks in STEP 7 Professional, other blocks / block versions are converted to fixed coded user blocks with the name supplement "\_LF" (legacy function) during migration.

You will find information on the behavior of the individual block versions during migration in the tables of this document based on three possible entries in the "Comment" column:

- **Migration: OK**

The block can be migrated in this version and retains its name.

- **Migration: \_LF**

The block in this version is converted to a fixed coded user block with the name supplement "\_LF" (legacy function) during migration. The migrated block can no longer be freely configured.

Prior to migration check whether the existing block can be replaced by another block from the library of STEP 7 Professional.

- **Migration: \_S**

The block can be migrated in this version but will be converted to a block with the name postfix "\_S".

Example: "PUT" becomes "PUT\_S".

Note that the migration capability of the program blocks relates to the STEP 7 Professional version specified in the section "Validity of the document under the point "S7-1200/1500".

You will find more detailed information on migrating projects and program blocks in the information system of STEP 7 Professional.

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### Note

#### Checking migrated blocks

With a migrated block, always note the behavior in STEP 7 Professional, for example access to data blocks or the compatibility of data types used. You will find information on this in the information system of STEP 7 Professional.

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## Notes on the tables and abbreviations

The table columns have the following meaning and use the following abbreviations or identifiers:

- **Version**

The block version in the program block library of the specified STEP 7 version.

- **CP type**

Subnet type in which the device / module is used.

- IE → Industrial Ethernet
- PB → PROFIBUS
- GPRS → GSM network with GPRS service

- **STEP 7 / NCM S7 version**

STEP 7 version as of which the specified program block version is available in the program block library.

- **Remarks**

Additional notes on the program block version described and its capability of being migrated to STEP 7 Professional.

- **Reason for change**

Reasons for a change include bug fixes or enhanced functions.

- BF → Bugfix
- X → Enhanced functionality / improvement / optimization
- I → Reasons relating to manufacturing
- New → First release of the block

- **Bugs fixed / extended functionality**

Here, you will find more information on the reasons for the change.

## Downloads of the current versions of the program blocks

For new user programs, always use the current program block versions. You will find information on the current program block versions and can download the current SIMATIC NET program blocks from the Internet under the following Entry ID:

Link: (<https://support.industry.siemens.com/cs/ww/en/view/109481127>)

If you are replacing a CP, please follow the instructions in the relevant manual (refer to "Further information").

## Current version histories (S7 CPs and program blocks)

The latest releases of the version histories for SIMATIC NET program blocks and S7 CPs can be found under the following entry ID:

Link: (<https://support.industry.siemens.com/cs/ww/en/view/109474421>)

## **Further information**

You will find further information on the program blocks in the manual Program Blocks for SIMATIC NET S7 CPs":

Entry ID: Link: (<https://support.industry.siemens.com/cs/ww/en/view/62543517>)

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# SIMATIC S7-300

## 1.1 SIMATIC S7-300 SEND / RECEIVE (open communications services)

### SIMATIC S7-300 SEND / RECEIVE

The following program blocks are available for the selected communications service:

Table 1- 1 FC5 / AG\_SEND

| Version | CP type | STEP 7 version                                                            | Remarks                                                         | Reason for change | Bugs fixed                                                                                                                                                                       | Enhanced functions                                                             |
|---------|---------|---------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| >>4.2<< | PB + IE | <ul style="list-style-type: none"> <li>V5.2+SP1</li> <li>V12.0</li> </ul> | Migration: OK                                                   | BF                | Synchronization problem between program block and CP caused incorrect display in the block.                                                                                      | -                                                                              |
| 4.1     | PB + IE | V5.1 + SP2 + HF1                                                          | Migration: _LF                                                  | BF                | When operating PROFINET blocks and SEND/RECV at the same time, the condition code Status = 80C4 <sub>H</sub> (communications error) occurred with FC SEND/RECV after a few jobs. | -                                                                              |
| 4.0     | PB + IE | V5.1+SP2                                                                  | New IE CPs allow data length LEN > 240 bytes.<br>Migration: _LF | X+BF              | Length information for "long data" was incorrect.                                                                                                                                | Long data (> 240 bytes) with new IE CPs.                                       |
| 3.0     | PB + IE | V5.1                                                                      | Migration: _LF                                                  | X                 | -                                                                                                                                                                                | Enhanced protocol to ensure compatibility between new and older CP generation. |
| 1.2     | PB + IE | V5.0                                                                      | Migration: _LF                                                  | X                 | -                                                                                                                                                                                | Expansion of programming support for the ID and LADDR parameters.              |
| 1.11    | PB + IE | V2.1                                                                      | Send data length LEN ≤ 240 bytes.<br>Migration: _LF             | New               | -                                                                                                                                                                                | -                                                                              |

Table 1- 2 FC50 / AG\_LSEND

| Version | CP type | STEP 7 version | Remarks                                                                                                                    | Reason for change | Bugs fixed                                                                                                                                                                             | Enhanced functions |
|---------|---------|----------------|----------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>3.0<< | PB + IE | V5.1 to V5.2   | The program block AG_LSEND is no longer shipped as of STEP 7 V5.3!<br>Use the current version of AG_SEND.<br>Migration: OK | BF                | SEND (ANY) parameter:<br>DWORD+WORD pointers are now correctly interpreted in L mode.                                                                                                  | -                  |
| 2.6     | PB + IE | V5.0           | Migration: _LF                                                                                                             | X                 | Negative values for transfer data length (LEN < 0) are rejected immediately with a status condition code.                                                                              | -                  |
| 2.5     | PB + IE | V4.0           | Migration: _LF                                                                                                             | BF                | Comments entered for block variables corrected or expanded.                                                                                                                            | -                  |
| 2.4     | PB + IE | V4.0           | -                                                                                                                          | BF                | <ul style="list-style-type: none"> <li>Internal initialization sequences expanded with test routines.</li> <li>Sequence of block call with ACT = 0 ("empty run") optimized.</li> </ul> | -                  |
| 2.1     | PB + IE | V4.0           | Migration: _LF                                                                                                             | BF                | Multiple instance capability of the FC is now ensured.                                                                                                                                 | -                  |
| 2.0     | PB + IE | V4.0           | Migration: _LF                                                                                                             | New               | -                                                                                                                                                                                      | -                  |

Table 1- 3 FC6 / AG\_RECV

| Version | CP type | STEP 7 version                                                            | Remarks                                                                                                                                                                         | Reason for change | Bugs fixed                                                                                                                                                                                                                                                                                                                             | Enhanced functions                       |
|---------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| >>4.7<< | PB + IE | <ul style="list-style-type: none"> <li>V5.2+SP1</li> <li>V12.0</li> </ul> | Migration: OK                                                                                                                                                                   | BF                | <p>Synchronization problem between program block and CP caused incorrect display in the block.</p> <p>Uncontrolled "0" bytes received is reported sporadically.</p> <p>Unexpected condition code Status = 80B1</p>                                                                                                                     | -                                        |
| 4.6     | PB + IE | V5.2+SP1 (approx. M2003)                                                  | Migration: _LF                                                                                                                                                                  | BF                | <p>Specifying LEN = 0 is now permitted. This means that a RECV call with length "0" is possible with the IE CPs in keeping with the standard.</p>                                                                                                                                                                                      | -                                        |
| 4.5     | PB + IE | V5.1 + SP2 + HF1                                                          | Migration: _LF                                                                                                                                                                  | BF                | <p>When operating PROFINET and SEND/RECV at the same time, the condition code Status = 80C4<sub>H</sub> (communications error) is displayed with the RECV block after a few jobs.</p> <p>Undefined condition code (for example, Status = 34F0<sub>H</sub>) in mixed operation (for example SEND/RECV communication + diagnostics).</p> | -                                        |
| 4.3     | PB + IE | V5.1+SP2                                                                  | <p>"New" IE CPs TLEN &gt; 240 bytes</p> <p><b>Notice:</b><br/>"Long data" can only be transferred in combination with IE CPs "..HX00.." and "..EX11".</p> <p>Migration: _LF</p> | X+BF              | <p>Length information for "long data" was incorrect.</p>                                                                                                                                                                                                                                                                               | Long data (> 240 bytes) with new IE CPs. |

| Version | CP type | STEP 7 version | Remarks                                                 | Reason for change | Bugs fixed | Enhanced functions                                                             |
|---------|---------|----------------|---------------------------------------------------------|-------------------|------------|--------------------------------------------------------------------------------|
| 3.0     | PB + IE | V5.1           | Migration: _LF                                          | X                 | -          | Enhanced protocol to ensure compatibility between new and older CP generation. |
| 1.2     | PB + IE | V5.0           | Migration: _LF                                          | X                 | -          | Expansion of programming support for the ID and LADDR parameters.              |
| 1.11    | PB + IE | V2.1           | Received data length LEN ≤ 240 bytes.<br>Migration: _LF | New               | -          | -                                                                              |

Table 1- 4 FC60 / AG\_LRECV

| Version | CP type | STEP 7 version | Remarks                                                                                                                    | Reason for change | Bugs fixed                                                                                                                                                         | Enhanced functions                                                |
|---------|---------|----------------|----------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| >>3.0<< | PB + IE | V5.1           | The program block AG_LRECV is no longer shipped as of STEP 7 V5.3.<br>Migration: OK<br>Use the current version of AG_RECV. | BF                | RECV (ANY) parameter: DWORD and WORD pointers are now correctly interpreted in L mode.                                                                             | Expansion of programming support for the ID and LADDR parameters. |
| 2.7     | PB + IE | V5.0+SP1       | Migration: _LF                                                                                                             | BF                | Data reception < 240 bytes with >240 specified in Any pointer.                                                                                                     | -                                                                 |
| 2.4     | PB + IE | V4.x           | Migration: _LF                                                                                                             | BF                | Comments entered for block variables corrected or expanded.                                                                                                        | -                                                                 |
| 2.3     | PB + IE | V4.x           | Migration: _LF                                                                                                             | BF                | Internal initialization sequences expanded with test routines.<br>Correction of the length information in the situation "Send short data" and "Receive long data". | -                                                                 |

| Version | CP type | STEP 7 version | Remarks                                                                                                                                              | Reason for change | Bugs fixed                                             | Enhanced functions |
|---------|---------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------|--------------------|
| 2.1     | PB + IE | V4.x           | Migration: _LF                                                                                                                                       | BF                | Multiple instance capability of the FC is now ensured. | -                  |
| 2.0     | PB + IE | V4.x           | <ul style="list-style-type: none"> <li>PROFIBUS:<br/>LEN ≤ 240 bytes</li> <li>I. Ethernet:<br/>LEN &gt; 240 bytes possible</li> </ul> Migration: _LF | New               | -                                                      | -                  |

Table 1- 5 FC7 / AG\_LOCK

| Version | CP type | STEP 7 version                                                                    | Remarks        | Reason for change | Bugs fixed     | Enhanced functions                                                             |
|---------|---------|-----------------------------------------------------------------------------------|----------------|-------------------|----------------|--------------------------------------------------------------------------------|
| >>4.0<< | IE      | <ul style="list-style-type: none"> <li>V5.1 + SP2 + HF1</li> <li>V12.0</li> </ul> | Migration: OK  | BF                | Status display | Enhanced protocol to ensure compatibility between new and older CP generation. |
| 1.0     | IE      | V5.1                                                                              | Migration: _LF | New               | -              | -                                                                              |

Table 1- 6 FC8 / AG\_UNLOCK

| Version | CP type | STEP 7 version                                                                    | Remarks        | Reason for change | Bugs fixed     | Enhanced functions                                                             |
|---------|---------|-----------------------------------------------------------------------------------|----------------|-------------------|----------------|--------------------------------------------------------------------------------|
| >>4.0<< | IE      | <ul style="list-style-type: none"> <li>V5.1 + SP2 + HF1</li> <li>V12.0</li> </ul> | Migration: OK  | BF                | Status display | Enhanced protocol to ensure compatibility between new and older CP generation. |
| 1.0     | IE      | V5.1                                                                              | Migration: _LF | New               | -              | -                                                                              |

Table 1- 7 FC10 / AG\_CNTRL

| Version | CP type | STEP 7 version                                                          | Remarks       | Reason for change | Bugs fixed                                          | Enhanced functions |
|---------|---------|-------------------------------------------------------------------------|---------------|-------------------|-----------------------------------------------------|--------------------|
| >>1.4<< | IE      | <ul style="list-style-type: none"> <li>V5.3.3</li> <li>V12.0</li> </ul> | Migration: OK | BF                | Calls with an invalid CMD were completed with DONE. |                    |
| 1.0     | IE      | <ul style="list-style-type: none"> <li>V5.3.3</li> </ul>                | Migration: OK | New               | -                                                   | -                  |

Table 1- 8 FB10 / AG\_CNTEX

| Version | CP type | STEP 7 version                                                          | Remarks       | Reason for change | Bugs fixed | Enhanced functions |
|---------|---------|-------------------------------------------------------------------------|---------------|-------------------|------------|--------------------|
| >>1.0<< | IE      | <ul style="list-style-type: none"> <li>V5.5.3</li> <li>V12.0</li> </ul> | Migration: OK | New               | -          | -                  |

## 1.2 SIMATIC S7-300 FTP

### SIMATIC S7-300 FTP

The following program blocks are available for the selected communications service:

Table 1- 9 FB40 / FTP\_CMD

| Version | CP type                   | STEP 7 version                                                          | Remarks                                                    | Reason for change | Bugs fixed                                                                                                                                   | Enhanced functions |
|---------|---------------------------|-------------------------------------------------------------------------|------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>2.1<< | CP 343-1 Advanced V3.0.44 | <ul style="list-style-type: none"> <li>V5.5.4</li> <li>V13.0</li> </ul> | Migration: OK                                              | X                 | New: Exactly matching data areas can be specified for the IP address, user name and password with the "NAME_STR" parameter for commands 1+17 | -                  |
| >>2.0<< |                           | <ul style="list-style-type: none"> <li>V5.5</li> <li>V12.0</li> </ul>   | Migration: OK                                              | X                 |                                                                                                                                              | Security functions |
| 1.0     | IE Advanced               | V5.4+SP4                                                                | Migration: _LF<br>FB40 replaces the functions FC40 - FC44. | New               | -                                                                                                                                            | -                  |

Table 1- 10 FC40 / FTP\_CONNECT

| Version | CP type     | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                                                                                                                                                       | Enhanced functions |
|---------|-------------|----------------|----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>1.1<< | IE Advanced | V5.2           | Migration: _LF | BF                | <ul style="list-style-type: none"> <li>Correct handling of the string length for file names.</li> <li>Changeover to English comments for the program block variables.</li> </ul> | -                  |
| 1.0     | IE Advanced | V5.1+SP3       | Migration: _LF | New               | -                                                                                                                                                                                | -                  |

Table 1- 11 FC41 / FTP\_STORE

| Version | CP type     | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                            | Enhanced functions |
|---------|-------------|----------------|----------------|-------------------|-------------------------------------------------------|--------------------|
| >>1.1<< | IE Advanced | V5.2           | Migration: _LF | BF                | Correct handling of the string length for file names. | -                  |
| 1.0     | IE Advanced | V5.1+SP3       | Migration: _LF | New               | -                                                     | -                  |

Table 1- 12 FC42 / FTP\_RETRIEVE

| Version | CP type     | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                            | Enhanced functions |
|---------|-------------|----------------|----------------|-------------------|-------------------------------------------------------|--------------------|
| >>1.2<< | IE Advanced | V5.5           | Migration: _LF | BF                | Correct reaction to access to non-existent file.      | -                  |
| 1.1     | IE Advanced | V5.2           | Migration: _LF | BF                | Correct handling of the string length for file names. | -                  |
| 1.0     | IE Advanced | V5.1+SP3       | Migration: _LF | New               | -                                                     | -                  |

Table 1- 13 FC43 / FTP\_DELETE

| Version | CP type     | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                            | Enhanced functions |
|---------|-------------|----------------|----------------|-------------------|-------------------------------------------------------|--------------------|
| >>1.1<< | IE Advanced | V5.2           | Migration: _LF | BF                | Correct handling of the string length for file names. | -                  |
| 1.0     | IE Advanced | V5.1+SP3       | Migration: _LF | New               | -                                                     | -                  |

Table 1- 14 FC44 / FTP\_QUIT

| Version | CP type     | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                                     | Enhanced functions |
|---------|-------------|----------------|----------------|-------------------|----------------------------------------------------------------|--------------------|
| >>1.1<< | IE Advanced | V5.2           | Migration: _LF | BF                | Changeover to English comments for the program block variables | -                  |
| 1.0     | IE Advanced | V5.1+SP3       | Migration: _LF | New               | -                                                              | -                  |

Table 1- 15 UDT1 / FILE\_DB\_HEADER

| Version | CP type     | STEP 7 version                                                             | Remarks                                | Reason for change | Bugs fixed | Enhanced functions |
|---------|-------------|----------------------------------------------------------------------------|----------------------------------------|-------------------|------------|--------------------|
| >>1.0<< | IE Advanced | <ul style="list-style-type: none"> <li>V5.1+S P3</li> <li>V12.0</li> </ul> | Migration: _OK; becomes FILE_DB_HEADER | New               | -          | -                  |

## 1.3 SIMATIC S7-300 IP\_CONFIG - programmed connections

### SIMATIC S7-300 IP\_CONFIG

The following program blocks are available for the selected communications service:

Table 1- 16 FB55 / IP\_CONFIG

| Version | CP type | STEP 7 version                                                            | Remarks        | Reason for change | Bugs fixed                                                                                                                                                 | Enhanced functions |
|---------|---------|---------------------------------------------------------------------------|----------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>1.3<< | IE      | <ul style="list-style-type: none"> <li>V5.4+SP4</li> <li>V12.0</li> </ul> | Migration: OK  | BF                | Multiple instance capability of the FB is now ensured.                                                                                                     | -                  |
| 1.1     | IE      | V5.3.3                                                                    | Migration: OK  | BF                | <ul style="list-style-type: none"> <li>IP_CONFIG data block larger than 32 KB is accepted.</li> <li>Correction of various block status messages</li> </ul> | -                  |
| 1.0     | IE      | V5.2+SP1                                                                  | Migration: _LF | New               | -                                                                                                                                                          | -                  |



## 1.4 SIMATIC S7-300 PROFINET IO

### S7-300 PROFINET IO

The following program blocks are available for the selected communications service:

Table 1- 17 FC11 / PNIO\_SEND

| Version | CP type | STEP 7 version                                                            | Remarks       | Reason for change | Bugs fixed | Enhanced functions                            |
|---------|---------|---------------------------------------------------------------------------|---------------|-------------------|------------|-----------------------------------------------|
| >>3.0<< | IE      | <ul style="list-style-type: none"> <li>V5.4+SP5</li> <li>V12.0</li> </ul> | Migration: OK | X                 | -          | Enhancement for faster user data transfer     |
| 2.0     | IE      | V5.4+SP4                                                                  | Migration: OK | X                 | -          | Supports PROFINET IO device and IO controller |
| 1.0     | IE      | V5.4+SP3                                                                  | Migration: OK | New               | -          | -                                             |

Table 1- 18 FC12 / PNIO\_RECV

| Version | CP type | STEP 7 version                                                            | Remarks       | Reason for change | Bugs fixed | Enhanced functions                            |
|---------|---------|---------------------------------------------------------------------------|---------------|-------------------|------------|-----------------------------------------------|
| >>3.0<< | IE      | <ul style="list-style-type: none"> <li>V5.4+SP5</li> <li>V12.0</li> </ul> | Migration: OK | X                 | -          | Enhancement for faster user data transfer     |
| 2.0     | IE      | V5.4+SP4                                                                  | Migration: OK | X                 | -          | Supports PROFINET IO device and IO controller |
| 1.0     | IE      | V5.4+SP3                                                                  | Migration: OK | New               | -          | -                                             |

Table 1- 19 FB52 / PNIO\_RW\_REC

| Version | CP type | STEP 7 version                                                            | Remarks       | Reason for change | Bugs fixed                                          | Enhanced functions |
|---------|---------|---------------------------------------------------------------------------|---------------|-------------------|-----------------------------------------------------|--------------------|
| >>1.1<< | IE      | <ul style="list-style-type: none"> <li>V5.4+SP4</li> <li>V12.0</li> </ul> | Migration: OK | BF                | Multiple instance capability of the FB now ensured. | -                  |
| 1.0     | IE      | V5.4+SP2                                                                  | Migration: OK | New               | -                                                   | -                  |

Table 1- 20 FB54 / PNIO\_ALARM

| Version | CP type | STEP 7 version                                                            | Remarks       | Reason for change | Bugs fixed                                          | Enhanced functions |
|---------|---------|---------------------------------------------------------------------------|---------------|-------------------|-----------------------------------------------------|--------------------|
| >>1.1<< | IE      | <ul style="list-style-type: none"> <li>V5.4+SP4</li> <li>V12.0</li> </ul> | Migration: OK | BF                | Multiple instance capability of the FB now ensured. | -                  |
| 1.0     | IE      | V5.4+SP2                                                                  | Migration: OK | New               | -                                                   | -                  |

## 1.5 SIMATIC S7-300 PROFINET IO / PROFINET energy

### S7-300 PROFINET IO / PROFINET energy

The following program blocks are available for the selected communications service:

Table 1- 21 FB85 / PE\_START\_END\_CP

| Version | CP type | STEP 7 version                                                            | Remarks       | Reason for change | Bugs fixed | Enhanced functions |
|---------|---------|---------------------------------------------------------------------------|---------------|-------------------|------------|--------------------|
| >>1.0<< | IE      | <ul style="list-style-type: none"> <li>V5.5+SP2</li> <li>V12.0</li> </ul> | Migration: OK | New               | -          | -                  |

Table 1- 22 FB86 / PE\_CMD\_CP

| Version | CP type | STEP 7 version                                                            | Remarks       | Reason for change | Bugs fixed | Enhanced functions |
|---------|---------|---------------------------------------------------------------------------|---------------|-------------------|------------|--------------------|
| >>1.0<< | IE      | <ul style="list-style-type: none"> <li>V5.5+SP2</li> <li>V12.0</li> </ul> | Migration: OK | New               | -          | -                  |

Table 1- 23 FB87 / PE\_I\_DEV\_CP

| Version | CP type | STEP 7 version                                                            | Remarks       | Reason for change | Bugs fixed | Enhanced functions |
|---------|---------|---------------------------------------------------------------------------|---------------|-------------------|------------|--------------------|
| >>1.0<< | IE      | <ul style="list-style-type: none"> <li>V5.5+SP2</li> <li>V12.0</li> </ul> | Migration: OK | New               | -          | -                  |

Table 1- 24 FB53 / DS3\_WRITE\_CP

| Version | CP type | STEP 7 version                                                            | Remarks                                              | Reason for change | Bugs fixed | Enhanced functions |
|---------|---------|---------------------------------------------------------------------------|------------------------------------------------------|-------------------|------------|--------------------|
| >>1.0<< | IE      | <ul style="list-style-type: none"> <li>V5.5+SP2</li> <li>V12.0</li> </ul> | Migration: OK; becomes PE_DS3_Write_ET200S_CP (FB88) | New               | -          | -                  |

## 1.6 SIMATIC S7-300 PROFINET CBA

### SIMATIC S7-300 PROFINET CBA

The following program blocks are available for the selected communications service:

Table 1- 25 FB88 / PN\_InOut

| Version | CP type | STEP 7 version                                                                            | Remarks                                                | Reason for change | Bugs fixed | Enhanced functions |
|---------|---------|-------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------|------------|--------------------|
| >>1.5<< | IE      | STEP 7 V5.3 SP2 with iMAP<br>STEP 7 add-on V2.0 SP3<br>and<br>SIMATIC iMap as of V2.0 SP1 | Configuration requires SIMATIC iMAP.<br>Migration: _LF | New               | -          | -                  |

## 1.7 SIMATIC S7-300 PROFIBUS DP

### SIMATIC S7-300 PROFIBUS DP

The following program blocks are available for the selected communications service:

Table 1- 26 FC1 / DP\_SEND

| Version | CP type | STEP 7 version                                                        | Remarks        | Reason for change | Bugs fixed | Enhanced functions                                                             |
|---------|---------|-----------------------------------------------------------------------|----------------|-------------------|------------|--------------------------------------------------------------------------------|
| >>3.0<< | PB      | <ul style="list-style-type: none"> <li>V5.1</li> <li>V12.0</li> </ul> | Migration: OK  | X                 | -          | Enhanced protocol to ensure compatibility between new and older CP generation. |
| 1.2     | PB      | V5.0                                                                  | Migration: _LF | X                 | -          | Expansion of programming support for the CPLADDR parameter.                    |
| 1.11    | PB      | V2.1                                                                  | Migration: _LF | New               | -          | -                                                                              |

Table 1- 27 FC2 / DP\_RECV

| Version | CP type | STEP 7 version                                                        | Remarks        | Reason for change | Bugs fixed | Enhanced functions                                                             |
|---------|---------|-----------------------------------------------------------------------|----------------|-------------------|------------|--------------------------------------------------------------------------------|
| >>3.0<< | PB      | <ul style="list-style-type: none"> <li>V5.1</li> <li>V12.0</li> </ul> | Migration: OK  | X                 | -          | Enhanced protocol to ensure compatibility between new and older CP generation. |
| 1.2     | PB      | V5.0                                                                  | Migration: _LF | X                 | -          | Expansion of programming support for the CPLADDR parameter.                    |
| 1.11    | PB      | V2.1                                                                  | Migration: _LF | New               | -          | -                                                                              |

Table 1- 28 FC3 / DP\_DIAG

| Version | CP type | STEP 7 version                                                        | Remarks        | Reason for change | Bugs fixed | Enhanced functions                                                             |
|---------|---------|-----------------------------------------------------------------------|----------------|-------------------|------------|--------------------------------------------------------------------------------|
| >>3.0<< | PB      | <ul style="list-style-type: none"> <li>V5.1</li> <li>V12.0</li> </ul> | Migration: OK  | X                 | -          | Enhanced protocol to ensure compatibility between new and older CP generation. |
| 1.2     | PB      | V5.0                                                                  | Migration: _LF | X                 | -          | Expansion of programming support for the CPLADDR parameter.                    |
| 1.11    | PB      | V2.1                                                                  | Migration: _LF | New               | -          | -                                                                              |

Table 1- 29 FC4 / DP\_CTRL

| Version | CP type | STEP 7 version                                                        | Remarks        | Reason for change | Bugs fixed | Enhanced functions                                                             |
|---------|---------|-----------------------------------------------------------------------|----------------|-------------------|------------|--------------------------------------------------------------------------------|
| >>3.0<< | PB      | <ul style="list-style-type: none"> <li>V5.1</li> <li>V12.0</li> </ul> | Migration: OK  | X                 | -          | Enhanced protocol to ensure compatibility between new and older CP generation. |
| 1.2     | PB      | V5.0                                                                  | Migration: _LF | X                 | -          | Expansion of programming support for the CPLADDR parameter.                    |
| 1.11    | PB      | V2.1                                                                  | Migration: _LF | New               | -          | -                                                                              |

## 1.8 SIMATIC S7-300 ERPC CP

### SIMATIC S7-300 ERPC CP

The following program blocks are available for the selected communications service:

Table 1- 30 FB56 / LOG\_TRIG

| Version | CP type | STEP 7 version                                                        | Remarks                                | Reason for change | Bugs fixed | Enhanced functions |
|---------|---------|-----------------------------------------------------------------------|----------------------------------------|-------------------|------------|--------------------|
| >>1.0<< | IE *)   | <ul style="list-style-type: none"> <li>V5.5</li> <li>V12.0</li> </ul> | Migration: OK; becomes LOGICAL_TRIGGER | New               | -          | -                  |

\*) CP 343-1 ERPC

## 1.9 SIMATIC S7-300 PROFIBUS FMS

### SIMATIC S7-300 PROFIBUS FMS

The following program blocks are available for the selected communications service:

Table 1- 31 FB2 / IDENT

| Version | CP type | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                                          | Enhanced functions                                     |
|---------|---------|----------------|----------------|-------------------|---------------------------------------------------------------------|--------------------------------------------------------|
| >>1.6<< | PB FMS  | V3.1           | Migration: _LF | BF                | Expansion / correction of programming support for the ID parameter. | -                                                      |
| 1.5     | PB FMS  | V5.0           | Migration: _LF | BF                | Disrupted FMS connection with fast cyclic call.                     | -                                                      |
| 1.2     | PB FMS  | V5.1+SP2       | Migration: _LF | X                 | -                                                                   | Expansion of programming support for the ID parameter. |
| 1.0     | PB FMS  | V5.3.1         | Migration: _LF | New               | -                                                                   | -                                                      |

Table 1- 32 FB3 / READ

| Version | CP type | STEP 7 version | Remarks                         | Reason for change | Bugs fixed                                                                                                       | Enhanced functions                                     |
|---------|---------|----------------|---------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| >>1.5<< | PB FMS  | V5.1+SP2       | Migration: _LF                  | BF                | Disrupted FMS connection with fast cyclic call.                                                                  | -                                                      |
| 1.4     | PB FMS  | V5.1+SP1       | SCL-compliant<br>Migration: _LF | BF                | The variable name can now be specified as STRING (in data type ANY). This makes it possible to program with SCL. | -                                                      |
| 1.2     | PB FMS  | V5.0           | Migration: _LF                  | X                 | -                                                                                                                | Expansion of programming support for the ID parameter. |
| 1.0     | PB FMS  | V3.1           | Migration: _LF                  | New               | -                                                                                                                | -                                                      |

Table 1- 33 FB4 / REPORT

| Version | CP type | STEP 7 version | Remarks                         | Reason for change | Bugs fixed                                                                                                       | Enhanced functions                                     |
|---------|---------|----------------|---------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| >>1.6<< | PB FMS  | V5.3.1         | Migration: _LF                  | BF                | Sporadically undefined behavior of the block or CP.                                                              | -                                                      |
| 1.5     | PB FMS  | V5.1+SP2       | Migration: _LF                  | BF                | Disrupted FMS connection with fast cyclic call.                                                                  | -                                                      |
| 1.4     | PB FMS  | V5.1+SP1       | SCL-compliant<br>Migration: _LF | BF                | The variable name can now be specified as STRING (in data type ANY). This makes it possible to program with SCL. | -                                                      |
| 1.2     | PB FMS  | V5.0           | Migration: _LF                  | X                 | -                                                                                                                | Expansion of programming support for the ID parameter. |
| 1.0     | PB FMS  | V3.1           | Migration: _LF                  | New               | -                                                                                                                | -                                                      |

Table 1- 34 FB5 / STATUS

| Version | CP type | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                                          | Enhanced functions                                     |
|---------|---------|----------------|----------------|-------------------|---------------------------------------------------------------------|--------------------------------------------------------|
| >>1.6<< | PB FMS  | V5.1+SP2       | Migration: _LF | BF                | Disrupted FMS connection with fast cyclic call.                     | -                                                      |
| 1.5     | PB FMS  | V5.3.1         | Migration: _LF | BF                | Expansion / correction of programming support for the ID parameter. | -                                                      |
| 1.2     | PB FMS  | V5.0           | Migration: _LF | X                 | -                                                                   | Expansion of programming support for the ID parameter. |
| 1.0     | PB FMS  | V3.1           | Migration: _LF | New               | -                                                                   | -                                                      |

Table 1- 35 FB6 / WRITE

| Version | CP type | STEP 7 version | Remarks                         | Reason for change | Bugs fixed                                                                                                       | Enhanced functions                                     |
|---------|---------|----------------|---------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| >>1.6<< | PB FMS  | V5.3.1         | Migration: _LF                  | BF                | Sporadically undefined behavior of the block or CP.                                                              | -                                                      |
| 1.5     | PB FMS  | V5.1+SP2       | Migration: _LF                  | BF                | Disrupted FMS connection with fast cyclic call.                                                                  | -                                                      |
| 1.4     | PB FMS  | V5.1+SP1       | SCL-compliant<br>Migration: _LF | BF                | The variable name can now be specified as STRING (in data type ANY). This makes it possible to program with SCL. | -                                                      |
| 1.2     | PB FMS  | V5.0           | Migration: _LF                  | X                 | -                                                                                                                | Expansion of programming support for the ID parameter. |
| 1.0     | PB FMS  | V3.1           | Migration: _LF                  | New               | -                                                                                                                | -                                                      |

## 1.10 SIMATIC S7-300 S7 communication

### S7-300 S7 communication

The following program blocks are available for the selected communications service:

Table 1- 36 FB8 / USEND

| Version | CP type | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                                                                                                                                                             | Expanded functions |
|---------|---------|----------------|----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>1.2<< | PB + IE | V5.3.1         | Migration: _S  | BF                | <ul style="list-style-type: none"> <li>After continuous operation (approx. 2-20 hours) CP Stop -&gt; Start necessary.</li> <li>Family name changed to "CP300PBK" in STEP 7.</li> </ul> | -                  |
| 1.1     | PB + IE | V5.3           | Migration: _LF | BF                | <ul style="list-style-type: none"> <li>Error when calling several blocks one after the other with fast CPUs.</li> <li>Family name changed to "CP300" in STEP 7.</li> </ul>             | -                  |
| 1.0     | PB + IE | V5.1+SP2+HF1   | Migration: _LF | New               | -                                                                                                                                                                                      | -                  |



Table 1- 37 FB9 / URCV

| Version | CP type | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                                                                                                                                                             | Expanded functions |
|---------|---------|----------------|----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>1.2<< | PB + IE | V5.3.1         | Migration: _S  | BF                | <ul style="list-style-type: none"> <li>After continuous operation (approx. 2-20 hours) CP Stop -&gt; Start necessary.</li> <li>Family name changed to "CP300PBK" in STEP 7.</li> </ul> | -                  |
| 1.1     | PB + IE | V5.3           | Migration: _LF | BF                | <ul style="list-style-type: none"> <li>Error when calling several blocks one after the other with fast CPUs.</li> <li>Family name changed to "CP300" in STEP 7.</li> </ul>             | -                  |
| 1.0     | PB + IE | V5.1+SP2+HF1   | Migration: _LF | New               | -                                                                                                                                                                                      | -                  |

Table 1- 38 FB12 / BSEND

| Version | CP type | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                                                                                                                                                             | Expanded functions |
|---------|---------|----------------|----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>1.4<< | PB + IE | V5.5           | Migration: _LF | BF                | When faster CPUs were used, there was sporadic deterioration in performance times.                                                                                                     | -                  |
| 1.2     | PB + IE | V5.3.1         | Migration: _OK | BF                | <ul style="list-style-type: none"> <li>After continuous operation (approx. 2-20 hours) CP Stop -&gt; Start necessary.</li> <li>Family name changed to "CP300PBK" in STEP 7.</li> </ul> | -                  |

| Version | CP type | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                                                                                                                                                 | Expanded functions |
|---------|---------|----------------|----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| 1.1     | PB + IE | V5.3           | Migration: _LF | BF                | <ul style="list-style-type: none"> <li>Error when calling several blocks one after the other with fast CPUs.</li> <li>Family name changed to "CP300" in STEP 7.</li> </ul> | -                  |
| 1.0     | PB + IE | V5.1+SP2+HF1   | Migration: _LF | New               | -                                                                                                                                                                          | -                  |

Table 1- 39 FB13 / BRCV

| Version | CP type | STEP 7 version    | Remarks        | Reason for change | Bugs fixed                                                                                                                                                                             | Expanded functions |
|---------|---------|-------------------|----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>1.4<< | PB + IE | V5.5              | Migration: _LF | BF                | When faster CPUs were used, there was sporadic deterioration in performance times.                                                                                                     | -                  |
| 1.2     | PB + IE | V5.3.1 as of 8/04 | Migration: _OK | BF                | <ul style="list-style-type: none"> <li>After continuous operation (approx. 2-20 hours) CP Stop -&gt; Start necessary.</li> <li>Family name changed to "CP300PBK" in STEP 7.</li> </ul> | -                  |
| 1.1     | PB + IE | V5.3              | Migration: _LF | BF                | <ul style="list-style-type: none"> <li>Error when calling several blocks one after the other with fast CPUs.</li> <li>Family name changed to "CP300" in STEP 7.</li> </ul>             | -                  |
| 1.0     | PB + IE | V5.1+SP2+HF1      | Migration: _LF | New               | -                                                                                                                                                                                      | -                  |

Table 1- 40 FB14 / GET

| Version | CP type | STEP 7 /<br>NCM S7<br>version | Remarks        | Reason for<br>change | Bugs fixed                                                                                                                                                                             | Enhanced functions |
|---------|---------|-------------------------------|----------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>1.2<< | PB + IE | V5.3.1<br>as of 8/04          | Migration: _S  | BF                   | <ul style="list-style-type: none"> <li>After continuous operation (approx. 2-20 hours) CP Stop -&gt; Start necessary.</li> <li>Family name changed to "CP300PBK" in STEP 7.</li> </ul> | -                  |
| 1.1     | PB + IE | V5.3                          | Migration: _LF | BF                   | <ul style="list-style-type: none"> <li>Error when calling several blocks one after the other with fast CPUs.</li> <li>Family name changed to "CP300" in STEP 7.</li> </ul>             | -                  |
| 1.0     | PB + IE | V5.1+SP2<br>+HF1              | Migration: _LF | New                  | -                                                                                                                                                                                      | -                  |

Table 1- 41 FB15 / PUT

| Version | CP type | STEP 7 version       | Remarks        | Reason for change | Bugs fixed                                                                                                                                                                             | Expanded functions |
|---------|---------|----------------------|----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>1.2<< | PB + IE | V5.3.1<br>as of 8/04 | Migration: _S  | BF                | <ul style="list-style-type: none"> <li>After continuous operation (approx. 2-20 hours) CP Stop -&gt; Start necessary.</li> <li>Family name changed to "CP300PBK" in STEP 7.</li> </ul> | -                  |
| 1.1     | PB + IE | V5.3                 | Migration: _LF | BF                | <ul style="list-style-type: none"> <li>Error when calling several blocks one after the other with fast CPUs.</li> <li>Family name changed to "CP300" in STEP 7.</li> </ul>             | -                  |
| 1.0     | PB + IE | V5.1+SP2<br>+HF1     | Migration: _LF | New               | -                                                                                                                                                                                      | -                  |

Table 1- 42 FC62 / C\_CNTRL

| Version | CP type | STEP 7 version       | Remarks        | Reason for change | Bugs fixed                                                                                                                                                                 | Expanded functions |
|---------|---------|----------------------|----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>1.2<< | PB + IE | V5.3.1<br>as of 8/04 | Migration: _OK | BF                | Family name changed to "CP300PBK" in STEP 7.                                                                                                                               | -                  |
| 1.1     | PB + IE | V5.3                 | Migration: _OK | BF                | <ul style="list-style-type: none"> <li>Error when calling several blocks one after the other with fast CPUs.</li> <li>Family name changed to "CP300" in STEP 7.</li> </ul> | -                  |
| 1.0     | PB + IE | V5.1+SP2<br>+HF1     | Migration: _LF | New               | -                                                                                                                                                                          | -                  |

# SIMATIC S7-400

## 2.1 SIMATIC S7-400 SEND / RECEIVE (open communications services)

### SIMATIC S7-400 SEND / RECEIVE

The following program blocks are available for the selected communications service:

Table 2- 1 FC5 / AG\_SEND

| Version | CP type | STEP 7 version                                                              | Remarks                                             | Reason for change | Bugs fixed                                              | Expanded functions                                                |
|---------|---------|-----------------------------------------------------------------------------|-----------------------------------------------------|-------------------|---------------------------------------------------------|-------------------------------------------------------------------|
| >>1.2<< | PB + IE | <ul style="list-style-type: none"> <li>V5.4 + SP5</li> <li>V12.0</li> </ul> | Migration: OK                                       | BF                | Incorrect warning in the consistency check was removed. | -                                                                 |
| 1.1     | PB + IE | V5.0                                                                        | Migration: OK                                       | X                 | -                                                       | Expansion of programming support for the ID and LADDR parameters. |
| 0.3     | PB + IE | V2.1                                                                        | Send data length LEN ≤ 240 bytes.<br>Migration: _LF | New               | -                                                       | -                                                                 |

Table 2- 2 FC50 / AG\_LSEND

| Version | CP type | STEP 7 version                                                        | Remarks       | Reason for change | Bugs fixed                                                                                                                                                                                 | Expanded functions |
|---------|---------|-----------------------------------------------------------------------|---------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>3.1<< | PB + IE | <ul style="list-style-type: none"> <li>V5.5</li> <li>V12.0</li> </ul> | Migration: OK | I                 | -                                                                                                                                                                                          | -                  |
| 3.0     | PB + IE | V5.1                                                                  | Migration: OK | BF                | SEND (ANY) parameter:<br>DWORD+WORD pointers are now correctly interpreted in L mode.<br><br>Negative values for transfer data length (LEN ≤ 0) are rejected with a status condition code. | -                  |

| Version | CP type | STEP 7 version | Remarks                                                                                                                                                                          | Reason for change | Bugs fixed | Expanded functions                                                |
|---------|---------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------|-------------------------------------------------------------------|
| 2.3     | PB + IE | V5.0+SP3       | Migration: _LF                                                                                                                                                                   | X                 | -          | Expansion of programming support for the ID and LADDR parameters. |
| 2.2     | PB + IE | V4.x           | <ul style="list-style-type: none"> <li>Send data length for PB:<br/>LEN ≤ 240 bytes.</li> <li>Send data length for IE:<br/>LEN &gt; 240 bytes possible</li> </ul> Migration: _LF | New               | -          | -                                                                 |

Table 2- 3 FC53 / AG\_SSEND

| Version | CP type | STEP 7 version                                                          | Remarks                                              | Reason for change | Bugs fixed                  | Expanded functions |
|---------|---------|-------------------------------------------------------------------------|------------------------------------------------------|-------------------|-----------------------------|--------------------|
| >>1.2<< | -       | <ul style="list-style-type: none"> <li>V5.5.3</li> <li>V12.0</li> </ul> | Migration: OK                                        | BF                | Can be used in the H system | -                  |
| 1.0     | IE      | V5.4+SP3                                                                | Send data length LEN ≤ 1452 bytes.<br>Migration: _LF | New               | -                           | -                  |

Table 2- 4 FC6 / AG\_RECV

| Version | CP type | STEP 7 version                                                              | Remarks                                                | Reason for change | Bugs fixed                                              | Expanded functions                                                |
|---------|---------|-----------------------------------------------------------------------------|--------------------------------------------------------|-------------------|---------------------------------------------------------|-------------------------------------------------------------------|
| >>1.2<< | PB + IE | <ul style="list-style-type: none"> <li>V5.4 + SP5</li> <li>V12.0</li> </ul> | Migration: OK                                          | BF                | Incorrect warning in the consistency check was removed. | -                                                                 |
| 1.1     | PB + IE | V5.0                                                                        | Migration: OK                                          | X                 | -                                                       | Expansion of programming support for the ID and LADDR parameters. |
| 0.3     | PB + IE | V2.1                                                                        | Receive data length LEN ≤ 240 bytes.<br>Migration: _LF | New               | -                                                       | -                                                                 |

Table 2- 5 FC60 / AG\_LRECV

| Version | CP type | STEP 7 version                                                        | Remarks                                                        | Reason for change | Bugs fixed                                                                           | Expanded functions                                                |
|---------|---------|-----------------------------------------------------------------------|----------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| >>3.1<< | PB + IE | <ul style="list-style-type: none"> <li>V5.5</li> <li>V12.0</li> </ul> | Migration: OK                                                  | I                 | -                                                                                    | -                                                                 |
| 3.0     | PB + IE | V5.1                                                                  | Migration: OK                                                  | BF                | RECV (ANY) parameter: DWORD + WORD pointers are now correctly interpreted in L mode. | -                                                                 |
| 2.4     | PB + IE | V5.0+SP3                                                              | Migration: _LF                                                 | X                 | -                                                                                    | Expansion of programming support for the ID and LADDR parameters. |
| 2.3     | PB + IE | V4.x                                                                  | PB: Tlen ≤ 240 bytes<br>IE: Tlen > 240 bytes<br>Migration: _LF | New               | -                                                                                    | -                                                                 |

Table 2- 6 FC63 / AG\_SRECV

| Version | CP type | STEP 7 version                                                          | Remarks                                                  | Reason for change | Bugs fixed                  | Expanded functions |
|---------|---------|-------------------------------------------------------------------------|----------------------------------------------------------|-------------------|-----------------------------|--------------------|
| >>1.2<< | -       | <ul style="list-style-type: none"> <li>V5.5.3</li> <li>V12.0</li> </ul> | Migration: OK                                            | BF                | Can be used in the H system | -                  |
| 1.0     | IE      | V5.4+SP3                                                                | Received data length LEN ≤ 1452 bytes.<br>Migration: _LF | New               |                             |                    |

Table 2- 7 FC7 / AG\_LOCK

| Version | CP type | STEP 7 version                                                        | Remarks       | Reason for change | Bugs fixed | Expanded functions |
|---------|---------|-----------------------------------------------------------------------|---------------|-------------------|------------|--------------------|
| >>1.0<< | IE      | <ul style="list-style-type: none"> <li>V5.1</li> <li>V12.0</li> </ul> | Migration: OK | New               | -          | -                  |

Table 2- 8 FC8 / AG\_UNLOCK

| Version | CP type | STEP 7 version                                                        | Remarks       | Reason for change | Bugs fixed | Expanded functions |
|---------|---------|-----------------------------------------------------------------------|---------------|-------------------|------------|--------------------|
| >>1.0<< | IE      | <ul style="list-style-type: none"> <li>V5.1</li> <li>V12.0</li> </ul> | Migration: OK | New               | -          | -                  |

Table 2- 9 FC10 / AG\_CNTRL

| Version | CP type | STEP 7 version                                                          | Remarks       | Reason for change | Bugs fixed | Expanded functions |
|---------|---------|-------------------------------------------------------------------------|---------------|-------------------|------------|--------------------|
| >>1.0<< | IE      | <ul style="list-style-type: none"> <li>V5.4.0</li> <li>V12.0</li> </ul> | Migration: OK | New               | -          |                    |

Table 2- 10 FB10 / AG\_CNTEX

| Version | CP type | STEP 7 version                                                          | Remarks       | Reason for change | Bugs fixed | Expanded functions |
|---------|---------|-------------------------------------------------------------------------|---------------|-------------------|------------|--------------------|
| >>1.0<< | IE      | <ul style="list-style-type: none"> <li>V5.5.3</li> <li>V12.0</li> </ul> | Migration: OK | New               | -          | -                  |



## 2.2 SIMATIC S7-400 FTP

### SIMATIC S7-400 FTP

The following program blocks are available for the selected communications service:

Table 2- 11 FB40 / FTP\_CMD

| Version | CP type                | STEP 7 version                                                                 | Remarks                                                    | Reason for change | Bugs fixed                                                                                                                                   | Enhanced functions                          |
|---------|------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| >>2.2<< | CP 443-1 Advanced V3.2 | <ul style="list-style-type: none"> <li>V5.5 + SP4 + HF8 + HSP 11 05</li> </ul> | Migration: OK                                              | X                 | -                                                                                                                                            | Passive FTP (client establishes connection) |
| >>2.1<< | -                      | <ul style="list-style-type: none"> <li>V5.5.4</li> <li>V13.0</li> </ul>        | Migration: OK                                              | X                 | New: Exactly matching data areas can be specified for the IP address, user name and password with the "NAME_STR" parameter for commands 1+17 |                                             |
| >>2.0<< | -                      | <ul style="list-style-type: none"> <li>V5.5.3</li> <li>V12.0</li> </ul>        | Migration: OK                                              | X                 | -                                                                                                                                            | Security functions                          |
| 1.0     | IE Advanced            | <ul style="list-style-type: none"> <li>V5.4+S P4</li> </ul>                    | FB40 replaces the functions FC40 - FC44.<br>Migration: _LF | New               | -                                                                                                                                            | -                                           |

Table 2- 12 FC40 / FTP\_CONNECT

| Version | CP type     | STEP 7 version | Remarks        | Reason for change | Bugs fixed | Enhanced functions |
|---------|-------------|----------------|----------------|-------------------|------------|--------------------|
| >>1.0<< | IE Advanced | V5.1+SP1       | Migration: _LF | New               | -          | -                  |

Table 2- 13 FC41 / FTP\_STORE

| Version | CP type     | STEP 7 version | Remarks        | Reason for change | Bugs fixed | Enhanced functions |
|---------|-------------|----------------|----------------|-------------------|------------|--------------------|
| >>1.0<< | IE Advanced | V5.1+SP1       | Migration: _LF | New               | -          | -                  |

Table 2- 14 FC42 / FTP\_RETRIEVE

| Version | CP type     | STEP 7 version | Remarks        | Reason for change | Bugs fixed | Enhanced functions |
|---------|-------------|----------------|----------------|-------------------|------------|--------------------|
| >>1.0<< | IE Advanced | V5.1+SP1       | Migration: _LF | New               | -          | -                  |

Table 2- 15 FC43 / FTP\_DELETE

| Version | CP type     | STEP 7 version | Remarks        | Reason for change | Bugs fixed | Enhanced functions |
|---------|-------------|----------------|----------------|-------------------|------------|--------------------|
| >>1.0<< | IE Advanced | V5.1+SP1       | Migration: _LF | New               | -          | -                  |

Table 2- 16 FC44 / FTP\_QUIT

| Version | CP type     | STEP 7 version | Remarks        | Reason for change | Bugs fixed | Enhanced functions |
|---------|-------------|----------------|----------------|-------------------|------------|--------------------|
| >>1.0<< | IE Advanced | V5.1+SP1       | Migration: _LF | New               | -          | -                  |

Table 2- 17 UDT1 / FILE\_DB\_HEADER

| Version | CP type     | STEP 7 version                                                            | Remarks                                | Reason for change | Bugs fixed | Enhanced functions |
|---------|-------------|---------------------------------------------------------------------------|----------------------------------------|-------------------|------------|--------------------|
| >>1.0<< | IE Advanced | <ul style="list-style-type: none"> <li>V5.1+SP1</li> <li>V12.0</li> </ul> | Migration: _OK; becomes FILE_DB_HEADER | New               | -          | -                  |

## 2.3 SIMATIC S7-400 IP\_CONFIG - programmed connections

### SIMATIC S7-400 IP\_CONFIG

The following program blocks are available for the selected communications service:

Table 2- 18 FB55 / IP\_CONFIG

| Version | CP type | STEP 7 version                                                            | Remarks        | Reason for change | Bugs fixed                                                                                              | Enhanced functions |
|---------|---------|---------------------------------------------------------------------------|----------------|-------------------|---------------------------------------------------------------------------------------------------------|--------------------|
| >>1.4<< | IE      | <ul style="list-style-type: none"> <li>V5.4+SP4</li> <li>V12.0</li> </ul> | Migration: OK  | BF                | Sporadic problems with large numbers of connections eliminated.                                         | -                  |
| 1.3     | IE      | V5.4+SP4                                                                  | Migration: OK  | BF                | Multiple instance capability of the FB is now ensured.                                                  | -                  |
| 1.2     | IE      | V5.4                                                                      | Migration: OK  | BF                | Execution optimized<br>Bugs fixed when transferring parameters of invalid DB numbers or non-loaded DBs. | -                  |
| 1.1     | IE      | V5.3+SP3                                                                  | Migration: _LF | BF                | Correction of various error messages                                                                    | -                  |
| 1.0     | IE      | V5.2+SP1+HF1                                                              | Migration: _LF | New               | -                                                                                                       | -                  |

## 2.4 SIMATIC S7-400 PROFINET CBA

### SIMATIC S7-400 PROFINET CBA

The following program blocks are available for the selected communications service:

Table 2- 19 FB88 / PN\_InOut

| Version | CP type | STEP 7 version                                                                   | Remarks                                                    | Reason for change | Bugs fixed | Enhanced functions |
|---------|---------|----------------------------------------------------------------------------------|------------------------------------------------------------|-------------------|------------|--------------------|
| >>1.3<< | IE      | STEP 7 V5.3 SP3 with iMAP STEP 7 add-on V2.0+SP3 and SIMATIC iMap as of V2.0 SP1 | The configuration requires SIMATIC iMAP.<br>Migration: _LF | New               | -          | -                  |

Table 2- 20 FB90 / PN\_InOut\_Fast

| Version | CP type | STEP 7 version                                                                   | Remarks                                                                                                         | Reason for change | Bugs fixed | Enhanced functions |
|---------|---------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------|------------|--------------------|
| >>1.0<< | IE      | STEP 7 V5.4 SP1 with iMAP STEP 7 add-on V3.0+SP1 and SIMATIC iMap as of V2.0 SP1 | The configuration requires SIMATIC iMAP.<br>FB90 is supported by all CPUs as of version V4.1.<br>Migration: _LF | New               | -          | -                  |

## 2.5 SIMATIC S7-400 PROFIBUS FMS

### S7-400 PROFIBUS FMS

The following program blocks are available for the selected communications service:

Table 2- 21 FB2 / IDENT

| Version | CP type | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                              | Enhanced functions                                     |
|---------|---------|----------------|----------------|-------------------|---------------------------------------------------------|--------------------------------------------------------|
| >>1.4<< | PB FMS  | V5.4 + SP5     | Migration: _LF | BF                | Incorrect warning in the consistency check was removed. | -                                                      |
| 1.3     | PB FMS  | V5.0           | Migration: _LF | X                 | -                                                       | Expansion of programming support for the ID parameter. |
| 1.10    | PB FMS  | V3.1           | Migration: _LF | New               | -                                                       | -                                                      |

Table 2- 22 FB3 / READ

| Version | CP type | STEP 7 version | Remarks                         | Reason for change | Bugs fixed                                                                                                       | Enhanced functions                                     |
|---------|---------|----------------|---------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| >>1.5<< | PB FMS  | V5.1 + SP1     | SCL-compliant<br>Migration: _LF | BF                | The variable name can now be specified as STRING (in data type ANY). This makes it possible to program with SCL. | -                                                      |
| 1.3     | PB FMS  | V5.0           | Migration: _LF                  | X                 | -                                                                                                                | Expansion of programming support for the ID parameter. |
| 1.10    | PB FMS  | V3.1           | Migration: _LF                  | New               | -                                                                                                                | -                                                      |

Table 2- 23 FB4 / REPORT

| Version | CP type | STEP 7 version | Remarks                         | Reason for change | Bugs fixed                                                                                                       | Enhanced functions                                     |
|---------|---------|----------------|---------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| >>1.5<< | PB FMS  | V5.1 + SP1     | SCL-compliant<br>Migration: _LF | BF                | The variable name can now be specified as STRING (in data type ANY). This makes it possible to program with SCL. | -                                                      |
| 1.3     | PB FMS  | V5.0           | Migration: _LF                  | X                 | -                                                                                                                | Expansion of programming support for the ID parameter. |
| 1.10    | PB FMS  | V3.1           | Migration: _LF                  | New               | -                                                                                                                | -                                                      |

Table 2- 24 FB5 / STATUS

| Version | CP type | STEP 7 version | Remarks        | Reason for change | Bugs fixed                                              | Enhanced functions                                     |
|---------|---------|----------------|----------------|-------------------|---------------------------------------------------------|--------------------------------------------------------|
| >>1.4<< | PB FMS  | V5.4 + SP5     | Migration: _LF | BF                | Incorrect warning in the consistency check was removed. | -                                                      |
| 1.3     | PB FMS  | V5.0           | Migration: _LF | X+F               | various                                                 | Expansion of programming support for the ID parameter. |
| 1.10    | PB FMS  | V3.1           | Migration: _LF | New               | -                                                       | -                                                      |

Table 2- 25 FB6 / WRITE

| Version | CP type | STEP 7 / NCM S7 version | Remarks                         | Reason for change | Bugs fixed                                                                                                       | Enhanced functions                                     |
|---------|---------|-------------------------|---------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| >>1.5<< | PB FMS  | V5.1 + SP1              | SCL-compliant<br>Migration: _LF | BF                | The variable name can now be specified as STRING (in data type ANY). This makes it possible to program with SCL. | -                                                      |
| 1.3     | PB FMS  | V3.1                    | Migration: _LF                  | X                 | -                                                                                                                | Expansion of programming support for the ID parameter. |
| 1.10    | PB FMS  | V3.1                    | Migration: _LF                  | New               | -                                                                                                                | -                                                      |

# SIMATIC S7-1200

## 3.1 SIMATIC S7-1200 Telecontrol

### SIMATIC S7-1200 Telecontrol

The following program blocks are available for the selected communications service.

Different versions of blocks of the same type cannot be used in a station.

Table 3- 1 TC\_CON

| Version | CP type        | STEP 7 version     | Remarks                                                     | Reason for change | Bugs fixed                                                                     | Enhanced functions |
|---------|----------------|--------------------|-------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------|--------------------|
| >>1.2<< | CP 1242-7 V1.x | V13                | -                                                           | I                 | -                                                                              | -                  |
| 1.1     | CP 1242-7 V1.x | V12.0 SP1          | -                                                           | BF                | The value change of REQ is detected when BUSY = 1 and evaluated when DONE = 1. | -                  |
| 1.0     | CP 1242-7 V1.x | V11.0 SP2 Update 2 | The value change of REQ is not detected in the BUSY status. | New               | -                                                                              | -                  |

Table 3- 2 TC\_DISCON

| Version | CP type        | STEP 7 version     | Remarks          | Reason for change | Bugs fixed       | Enhanced functions |
|---------|----------------|--------------------|------------------|-------------------|------------------|--------------------|
| >>1.2<< | CP 1242-7 V1.x | V13                | -                | I                 | -                | -                  |
| 1.1     | CP 1242-7 V1.x | V12.0 SP1          | -                | BF                | REQ (see TC_CON) | -                  |
| 1.0     | CP 1242-7 V1.x | V11.0 SP2 Update 2 | REQ (see TC_CON) | New               | -                | -                  |

Table 3- 3 TC\_SEND

| Version | CP type        | STEP 7 version     | Remarks          | Reason for change | Bugs fixed       | Enhanced functions |
|---------|----------------|--------------------|------------------|-------------------|------------------|--------------------|
| >>1.2<< | CP 1242-7 V1.x | V13                | -                | I                 | -                | -                  |
| 1.1     | CP 1242-7 V1.x | V12.0 SP1          | -                | BF                | REQ (see TC_CON) | -                  |
| 1.0     | CP 1242-7 V1.x | V11.0 SP2 Update 2 | REQ (see TC_CON) | New               | -                | -                  |

Table 3- 4 TC\_RECV

| Version | CP type | STEP 7 version     | Remarks                                                                                                   | Reason for change | Bugs fixed                                                     | Enhanced functions |
|---------|---------|--------------------|-----------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------|--------------------|
| >>1.1<< | GPRS    | V12.0 SP1          | -                                                                                                         | BF                | EN_R: After setting 1 to 0, the block is immediately inactive. | -                  |
| 1.0     | GPRS    | V11.0 SP2 Update 2 | EN_R: After setting 1 to 0, the block receives data again (until DONE and ERROR = 0).<br>REQ (see TC_CON) | New               | -                                                              | -                  |

Table 3- 5 TC\_CONFIG

| Version | CP type        | STEP 7 version     | Remarks          | Reason for change | Bugs fixed       | Enhanced functions |
|---------|----------------|--------------------|------------------|-------------------|------------------|--------------------|
| >>1.2<< | CP 1242-7 V1.x | V13                | -                | I                 | -                | -                  |
| 1.1     | CP 1242-7 V1.x | V12.0 SP1          | -                | BF                | REQ (see TC_CON) | -                  |
| 1.0     | CP 1242-7 V1.x | V11.0 SP2 Update 2 | REQ (see TC_CON) | New               | -                | -                  |



# SIMATIC S7-1500

## 4.1 SIMATIC S7-1500 Ethernet FTP

### SIMATIC S7-1500 FTP

The following program block is available for the selected communications service:

Table 4- 1 FTP\_CMD

| Version | CP type | STEP 7 version | Remarks | Reason for change | Bugs fixed                                                                                                                       | Enhanced functions |
|---------|---------|----------------|---------|-------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------|
| >>1.5<< | IE      | V13.0          | -       | BF                | Update/additions to the status displays<br>Bug fixed in the evaluation of the parameters in the header of the referenced file DB | -                  |
| 1.2     | IE      | V12.0 SP1      | -       | BF                | Program code improved                                                                                                            | -                  |
| 1.0     | IE      | V12.0          | -       | New               | -                                                                                                                                | -                  |

