

OFFICIAL MANUFACTURER DOCUMENT PACKAGE

# Manufacturer's Manual

**6ES7315-2FJ14-0AB0**

Siemens official documentation for the exact article number.

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SIMATIC S7-300 CPU315F-2 PN/DP, Central processing unit with 512 KB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface Ethernet PROFINET, with 2-port switch, Micro Memory Card required



Figure similar

| General information                                         |                                                    |
|-------------------------------------------------------------|----------------------------------------------------|
| HW functional status                                        | 01                                                 |
| Firmware version                                            | V3.2                                               |
| Engineering with                                            |                                                    |
| • Programming package                                       | STEP 7 V5.5 or higher, Distributed Safety V5.4 SP4 |
| Supply voltage                                              |                                                    |
| Rated value (DC)                                            | Yes                                                |
| • 24 V DC                                                   |                                                    |
| permissible range, lower limit (DC)                         | 20.4 V                                             |
| permissible range, upper limit (DC)                         | 28.8 V                                             |
| external protection for power supply lines (recommendation) | 2 A min.                                           |
| Mains buffering                                             |                                                    |
| • Mains/voltage failure stored energy time                  | 5 ms                                               |
| • Repeat rate, min.                                         | 1 s                                                |
| Input current                                               |                                                    |
| Current consumption (rated value)                           | 750 mA                                             |

|                                                         |                                                                                               |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Current consumption (in no-load operation), typ.        | 150 mA                                                                                        |
| Inrush current, typ.                                    | 4 A                                                                                           |
| $I^2t$                                                  | 1 A <sup>2</sup> ·s                                                                           |
| <b>Power loss</b>                                       |                                                                                               |
| Power loss, typ.                                        | 4.65 W                                                                                        |
| <b>Memory</b>                                           |                                                                                               |
| <b>Work memory</b>                                      |                                                                                               |
| • integrated                                            | 512 kbyte                                                                                     |
| • expandable                                            | No                                                                                            |
| • Size of retentive memory for retentive data blocks    | 128 kbyte                                                                                     |
| <b>Load memory</b>                                      |                                                                                               |
| • Plug-in (MMC)                                         | Yes                                                                                           |
| • Plug-in (MMC), max.                                   | 8 Mbyte                                                                                       |
| • Data management on MMC (after last programming), min. | 10 y                                                                                          |
| <b>Backup</b>                                           |                                                                                               |
| • present                                               | Yes; Guaranteed by MMC (maintenance-free)                                                     |
| • without battery                                       | Yes; Program and data                                                                         |
| <b>CPU processing times</b>                             |                                                                                               |
| for bit operations, typ.                                | 0.05 µs                                                                                       |
| for word operations, typ.                               | 0.09 µs                                                                                       |
| for fixed point arithmetic, typ.                        | 0.12 µs                                                                                       |
| for floating point arithmetic, typ.                     | 0.45 µs                                                                                       |
| <b>CPU-blocks</b>                                       |                                                                                               |
| Number of blocks (total)                                | 1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used. |
| <b>DB</b>                                               |                                                                                               |
| • Number, max.                                          | 1 024; Number range: 1 to 16000                                                               |
| • Size, max.                                            | 64 kbyte                                                                                      |
| <b>FB</b>                                               |                                                                                               |
| • Number, max.                                          | 1 024; Number range: 0 to 7999                                                                |
| • Size, max.                                            | 64 kbyte                                                                                      |
| <b>FC</b>                                               |                                                                                               |
| • Number, max.                                          | 1 024; Number range: 0 to 7999                                                                |
| • Size, max.                                            | 64 kbyte                                                                                      |
| <b>OB</b>                                               |                                                                                               |
| • Size, max.                                            | 64 kbyte                                                                                      |
| • Number of free cycle OBs                              | 1; OB 1                                                                                       |
| • Number of time alarm OBs                              | 1; OB 10                                                                                      |
| • Number of delay alarm OBs                             | 2; OB 20, 21                                                                                  |

|                                               |                                                          |
|-----------------------------------------------|----------------------------------------------------------|
| • Number of cyclic interrupt OBs              | 4; OB 32, 33, 34, 35                                     |
| • Number of process alarm OBs                 | 1; OB 40                                                 |
| • Number of DPV1 alarm OBs                    | 3; OB 55, 56, 57                                         |
| • Number of isochronous mode OBs              | 1; OB 61                                                 |
| • Number of startup OBs                       | 1; OB 100                                                |
| • Number of asynchronous error OBs            | 6; OB 80, 82, 83, 85, 86, 87 (OB83 only for PROFINET IO) |
| • Number of synchronous error OBs             | 2; OB 121, 122                                           |
| <b>Nesting depth</b>                          |                                                          |
| • per priority class                          | 16                                                       |
| • additional within an error OB               | 4                                                        |
| <b>Counters, timers and their retentivity</b> |                                                          |
| <b>S7 counter</b>                             |                                                          |
| • Number                                      | 256                                                      |
| <b>Retentivity</b>                            |                                                          |
| — adjustable                                  | Yes                                                      |
| — lower limit                                 | 0                                                        |
| — upper limit                                 | 255                                                      |
| — preset                                      | Z 0 to Z 7                                               |
| <b>Counting range</b>                         |                                                          |
| — adjustable                                  | Yes                                                      |
| — lower limit                                 | 0                                                        |
| — upper limit                                 | 999                                                      |
| <b>IEC counter</b>                            |                                                          |
| • present                                     | Yes                                                      |
| • Type                                        | SFB                                                      |
| • Number                                      | Unlimited (limited only by RAM capacity)                 |
| <b>S7 times</b>                               |                                                          |
| • Number                                      | 256                                                      |
| <b>Retentivity</b>                            |                                                          |
| — adjustable                                  | Yes                                                      |
| — lower limit                                 | 0                                                        |
| — upper limit                                 | 255                                                      |
| — preset                                      | No retentivity                                           |
| <b>Time range</b>                             |                                                          |
| — lower limit                                 | 10 ms                                                    |
| — upper limit                                 | 9 990 s                                                  |
| <b>IEC timer</b>                              |                                                          |
| • present                                     | Yes                                                      |
| • Type                                        | SFB                                                      |
| • Number                                      | Unlimited (limited only by RAM capacity)                 |
| <b>Data areas and their retentivity</b>       |                                                          |

|                                                     |                                                                           |
|-----------------------------------------------------|---------------------------------------------------------------------------|
| retentive data area in total                        | all, 128 KB max.                                                          |
| <b>Flag</b>                                         |                                                                           |
| • Number, max.                                      | 2 048 byte                                                                |
| • Retentivity preset                                | MB 0 to MB 15                                                             |
| • Number of clock memories                          | 8; 1 memory byte                                                          |
| <b>Data blocks</b>                                  |                                                                           |
| • Retentivity adjustable                            | Yes; via non-retain property on DB                                        |
| • Retentivity preset                                | Yes                                                                       |
| <b>Address area</b>                                 |                                                                           |
| <b>I/O address area</b>                             |                                                                           |
| • Inputs                                            | 2 048 byte                                                                |
| • Outputs                                           | 2 048 byte                                                                |
| <b>Process image</b>                                |                                                                           |
| • Inputs                                            | 2 048 byte                                                                |
| • Outputs                                           | 2 048 byte                                                                |
| • Inputs, adjustable                                | 2 048 byte                                                                |
| • Outputs, adjustable                               | 2 048 byte                                                                |
| • Inputs, default                                   | 128 byte                                                                  |
| • Outputs, default                                  | 128 byte                                                                  |
| <b>Subprocess images</b>                            |                                                                           |
| • Number of subprocess images, max.                 | 1; With PROFINET IO, the length of the user data is limited to 1600 bytes |
| <b>Digital channels</b>                             |                                                                           |
| • Inputs                                            | 16 384                                                                    |
| — of which central                                  | 1 024                                                                     |
| • Outputs                                           | 16 384                                                                    |
| — of which central                                  | 1 024                                                                     |
| <b>Analog channels</b>                              |                                                                           |
| • Inputs                                            | 1 024                                                                     |
| — of which central                                  | 256                                                                       |
| • Outputs                                           | 1 024                                                                     |
| — of which central                                  | 256                                                                       |
| <b>Hardware configuration</b>                       |                                                                           |
| Number of expansion units, max.                     | 3                                                                         |
| <b>Number of DP masters</b>                         |                                                                           |
| • integrated                                        | 1                                                                         |
| • via CP                                            | 4                                                                         |
| <b>Number of operable FMs and CPs (recommended)</b> |                                                                           |
| • FM                                                | 8                                                                         |
| • CP, PtP                                           | 8                                                                         |
| • CP, LAN                                           | 10                                                                        |