

OFFICIAL MANUFACTURER DOCUMENT PACKAGE

# Manufacturer's Manual

**6ES7414-3XJ00-0AB0**

Siemens official documentation for the exact article number.

Source: 6ES7414-3XJ00-0AB0.pdf

Selected official Siemens pages follow this cover.

SIMATIC S7-400, CPU 414-3 768 KB WORKING MEMORY (384 KB CODE, 384 KB DATA) 1. INTERFACE MPI/DP 12 MBIT/S 2.IF PROFIBUS DP, 3.IF FOR IFM ONLY REMAINING QUANTITY AVAIL.

| CiR – Configuration in RUN                  |                                                                                                                               |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| CiR synchronization time, basic load        | 100 ms                                                                                                                        |
| CiR synchronization time, time per I/O byte | 120 µs                                                                                                                        |
| Supply voltage                              |                                                                                                                               |
| Rated value (DC)                            |                                                                                                                               |
| • 24 V DC                                   | Yes                                                                                                                           |
| Input current                               |                                                                                                                               |
| from backplane bus 5 V DC, typ.             | 1.5 A                                                                                                                         |
| from backplane bus 5 V DC, max.             | 1.6 A; typ. 1.5 A                                                                                                             |
| from backplane bus 24 V DC, max.            | 450 mA; Total current consumption of the components connected to the MPI/DP interfaces, but no more than 150 mA per interface |
| Power loss                                  |                                                                                                                               |
| Power loss, typ.                            | 7.5 W                                                                                                                         |
| Memory                                      |                                                                                                                               |
| Work memory                                 |                                                                                                                               |
| • integrated                                | 768 kbyte                                                                                                                     |
| • integrated (for program)                  | 384 kbyte                                                                                                                     |
| • integrated (for data)                     | 384 kbyte                                                                                                                     |
| • expandable                                | No                                                                                                                            |
| Load memory                                 |                                                                                                                               |
| • expandable FEPRM                          | Yes; with Memory Card (FLASH)                                                                                                 |
| • expandable FEPRM, max.                    | 64 Mbyte                                                                                                                      |
| • integrated RAM, max.                      | 256 kbyte                                                                                                                     |
| • expandable RAM                            | Yes; with Memory Card (RAM)                                                                                                   |
| • expandable RAM, max.                      | 64 Mbyte                                                                                                                      |
| Backup                                      |                                                                                                                               |
| • present                                   | Yes                                                                                                                           |
| • with battery                              | Yes; all data                                                                                                                 |
| • without battery                           | No                                                                                                                            |
| Battery                                     |                                                                                                                               |
| Backup battery                              |                                                                                                                               |
| • Backup current, typ.                      | 40 µA                                                                                                                         |

|                                               |                      |
|-----------------------------------------------|----------------------|
| • Backup current, max.                        | 420 $\mu$ A          |
| • Feeding of external backup voltage to CPU   | 5 V DC to 15 V DC    |
| <b>CPU processing times</b>                   |                      |
| for bit operations, typ.                      | 0.1 $\mu$ s          |
| for word operations, typ.                     | 0.1 $\mu$ s          |
| for fixed point arithmetic, typ.              | 0.1 $\mu$ s          |
| for floating point arithmetic, typ.           | 0.6 $\mu$ s          |
| <b>CPU-blocks</b>                             |                      |
| <b>DB</b>                                     |                      |
| • Number, max.                                | 4 095; DB 0 reserved |
| • Size, max.                                  | 64 kbyte             |
| <b>FB</b>                                     |                      |
| • Number, max.                                | 2 048                |
| • Size, max.                                  | 64 kbyte             |
| <b>FC</b>                                     |                      |
| • Number, max.                                | 2 048                |
| • Size, max.                                  | 64 kbyte             |
| <b>OB</b>                                     |                      |
| • Number, max.                                | see instruction list |
| • Size, max.                                  | 64 kbyte             |
| • Number of time alarm OBs                    | 4                    |
| • Number of delay alarm OBs                   | 4                    |
| • Number of cyclic interrupt OBs              | 4                    |
| • Number of process alarm OBs                 | 4                    |
| <b>Nesting depth</b>                          |                      |
| • per priority class                          | 24                   |
| • additional within an error OB               | 2                    |
| <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>                         |                      |
| — lower limit                                 | 1                    |
| — upper limit                                 | 999                  |
| <b>IEC counter</b>                            |                      |
| • present                                     | Yes                  |
| • Type                                        | SFB                  |

|                                              |                                                                |
|----------------------------------------------|----------------------------------------------------------------|
| S7 times                                     |                                                                |
| • Number                                     | 256                                                            |
| Retentivity                                  |                                                                |
| — adjustable                                 | Yes                                                            |
| — lower limit                                | 0                                                              |
| — upper limit                                | 255                                                            |
| — preset                                     | No retentivity                                                 |
| Time range                                   |                                                                |
| — lower limit                                | 10 ms                                                          |
| — upper limit                                | 9 990 s                                                        |
| IEC timer                                    |                                                                |
| • present                                    | Yes                                                            |
| • Type                                       | SFB                                                            |
| Data areas and their retentivity             |                                                                |
| retentive data area in total                 | Total working and load memory (with backup battery)            |
| Flag                                         |                                                                |
| • Number, max.                               | 8 kbyte                                                        |
| • Retentivity available                      | Yes; from MB 0 to MB 8191                                      |
| • Retentivity preset                         | MB 0 to MB 15                                                  |
| • Number of clock memories                   | 8; 1 memory byte                                               |
| Data blocks                                  |                                                                |
| • Number, max.                               | 4 096; DB 0 reserved                                           |
| • Size, max.                                 | 64 kbyte                                                       |
| Address area                                 |                                                                |
| I/O address area                             |                                                                |
| • Inputs                                     | 8 kbyte                                                        |
| • Outputs                                    | 8 kbyte                                                        |
| of which distributed                         |                                                                |
| — MPI/DP interface, inputs                   | 2 kbyte                                                        |
| — MPI/DP interface, outputs                  | 2 kbyte                                                        |
| — DP interface, inputs                       | 6 kbyte                                                        |
| — DP interface, outputs                      | 6 kbyte                                                        |
| Process image                                |                                                                |
| • Inputs, adjustable                         | 8 kbyte; adjustable at the expense of the code area of the RAM |
| • Outputs, adjustable                        | 8 kbyte; adjustable at the expense of the code area of the RAM |
| • Inputs, default                            | 256 byte                                                       |
| • Outputs, default                           | 256 byte                                                       |
| • consistent data, max.                      | 244 byte                                                       |
| • Access to consistent data in process image | Yes                                                            |
| Subprocess images                            |                                                                |
| • Number of subprocess images, max.          | 8                                                              |

|                                                                                |                                                          |
|--------------------------------------------------------------------------------|----------------------------------------------------------|
| Digital channels                                                               |                                                          |
| • Inputs                                                                       | 65 536                                                   |
| — of which central                                                             | 65 536                                                   |
| • Outputs                                                                      | 65 536                                                   |
| — of which central                                                             | 65 536                                                   |
| Analog channels                                                                |                                                          |
| • Inputs                                                                       | 4 096                                                    |
| — of which central                                                             | 4 096                                                    |
| • Outputs                                                                      | 4 096                                                    |
| — of which central                                                             | 4 096                                                    |
| Hardware configuration                                                         |                                                          |
| Number of expansion units, max.                                                | 21; of which 6 ER with K-bus                             |
| connectable OPs                                                                | 31 without message processing, 8 with message processing |
| Multicomputing                                                                 | Yes; 4 CPUs max. (with UR1 or UR2)                       |
| Interface modules                                                              |                                                          |
| • Number of connectable IMs (total), max.                                      | 6                                                        |
| • Number of connectable IM 460s, max.                                          | 6                                                        |
| • Number of connectable IM 463s, max.                                          | 4; IM 463-2                                              |
| Number of DP masters                                                           |                                                          |
| • integrated                                                                   | 2                                                        |
| • via CP                                                                       | 10                                                       |
| • via IM 467                                                                   | 4                                                        |
| • Mixed mode IM + CP permitted                                                 | No; IM 467 cannot be used jointly with CP 443-5 Ext.     |
| • via interface module                                                         | 1                                                        |
| • Number of pluggable S5 modules (via adapter capsule in central device), max. | 6                                                        |
| Number of operable FMs and CPs (recommended)                                   |                                                          |
| • FM                                                                           | 32; Limited by number of slots and number of connections |
| • CP, PtP                                                                      | 32; limited by number of slots                           |
| • CP, LAN                                                                      | 32; limited by number of connections                     |
| • PROFIBUS and Ethernet CPs                                                    | 14; incl. CP 443-5 Ext. and IM 467                       |
| Slots                                                                          |                                                          |
| • required slots                                                               | 2                                                        |
| Time of day                                                                    |                                                          |
| Clock                                                                          |                                                          |
| • Hardware clock (real-time)                                                   | Yes                                                      |
| • retentive and synchronizable                                                 | Yes                                                      |
| • Resolution                                                                   | 1 ms                                                     |
| Operating hours counter                                                        |                                                          |
| • Number                                                                       | 8                                                        |
| Clock synchronization                                                          |                                                          |