



Product data sheet
6ES7414-2XG03-0AB0

Available as a Spare Part Only - subject to availability - SIMATIC S7-400, CPU 414-2 256 KB WORKING MEMORY (128 KB CODE, 128 KB DATA)

Supply voltages
Rated value

24 V DC

Yes

Feeding of external backup voltage to CPU

5 to 15 VDC

Current consumption

from backplane bus 24 V DC, max.

300 mA ; Total current consumption of the components connected to the MPI/DP interfaces, but no more than 150 mA per interface

from backplane bus 5 V DC, max.

1.6 A

Current consumption/ power loss

Power loss, typ.

7.5 W

Backup battery

Backup current, typ.

 40 μ A

Backup current, max.

 380 μ A

Memory
Data and program memory

Data memory, max.

128 Kibyte

Program memory, max.

128 Kibyte

Work memory

integrated

256 Kibyte

expandable

No

Load memory

expandable FEPRM

Yes ; with Memory Card (FLASH)

expandable FEPRM, max.

64 Mbyte

integrated RAM, max.

256 Kibyte

expandable RAM

Yes ; With Memory Card (RAM)

expandable RAM, max.

64 Mbyte

Backup

present

Yes

| | |
|--------------------------------------|----------------------|
| with battery | Yes ; All data |
| without battery | No |
| CPU/ blocks | |
| DB | |
| Number, max. | 4095 ; DB 0 reserved |
| Size, max. | 64 Kibyte |
| FB | |
| Number, max. | 2048 |
| Size, max. | 64 Kibyte |
| FC | |
| Number, max. | 2048 |
| Size, max. | 64 Kibyte |
| OB | |
| Size, max. | 64 Kibyte |
| Number of time alarm OBs | 4 |
| Number of delay alarm OBs | 4 |
| Number of watchdog interrupts | 4 |
| Number of process alarm OBs | 4 |
| Nesting depth | |
| per priority class | 24 |
| additional within an error OB | 2 |
| CPU/ processing times | |
| for bit operations, min. | 0.1 μ s |
| for word operations, min. | 0.1 μ s |
| for fixed point arithmetic, min. | 0.1 μ s |
| for floating point arithmetic, min. | 0.6 μ s |
| Times/counters and their retentivity | |
| S7 counter | |
| Number | 256 |
| Retentivity | |
| can be set | Yes |
| lower limit | 0 |
| upper limit | 255 |
| preset | Z 0 to Z 7 |
| Counting range | |

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| lower limit | 1 |
| upper limit | 999 |
| IEC counter | |
| present | Yes |
| Type | SFB |
| S7 times | |
| Number | 256 |
| Retentivity | |
| can be set | Yes |
| lower limit | 0 |
| upper limit | 255 |
| preset | No retentivity |
| Time range | |
| lower limit | 10 ms |
| upper limit | 9990 s |
| IEC timer | |
| present | Yes |
| Type | SFB |
| Data areas and their retentivity | |
| retentive data area, total | Total working and load memory (with backup battery) |
| Flag | |
| Number, max. | 8 Kibyte |
| Retentivity available | Yes ; MB 0 to MB 8191 |
| Number of clock memories | 8 ; 1 memory byte |
| Data blocks | |
| Number, max. | 4096 ; DB 0 reserved |
| Size, max. | 64 Kibyte |
| Address area | |
| I/O address area | |
| Inputs | 8 Kibyte |
| Outputs | 8 Kibyte |
| Process image | |
| Inputs, adjustable | 8 Kibyte ; adjustable at the expense of the code area of the RAM |
| Outputs, adjustable | 8 Kibyte ; adjustable at the expense of the code area of the RAM |

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| 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 | 65536 |
| Outputs | 65536 |
| Inputs, of which central | 65536 |
| Outputs, of which central | 65536 |
| Analog channels | |
| Inputs | 4096 |
| Outputs | 4096 |
| Inputs, of which central | 4096 |
| Outputs, of which central | 4096 |
| Hardware configuration | |
| connectable OPs | 31 without message processing, 8 with message processing |
| Central devices, max. | 1 |
| Expansion devices, max. | 21 ; (of which 6 ER with K-bus) |
| Multicomputing | Yes ; 4 CPUs max. (with UR1 or UR2) |
| IM | |
| 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 IM 467 | 4 |
| via CP | 10 |
| Mixed mode IM + CP permitted | No ; IM 467 cannot be used jointly with CP 443-5 Ext. |
| via interface module | 0 |
| Number of pluggable S5 modules (via adapter capsule in central device), max. | 6 |
| Number of operable FMs and CPs (recommended) | |

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| FM | 32 ; Limited due to number of slots and number of connections |
| CP, point-to-point | 32 ; limited due to number of slots |
| CP, LAN | 32 ; limited due to number of connections |
| PROFIBUS and Ethernet CPs | 14 ; incl. CP 443-5 Ext. and IM 467 |
| Time of day | |
| Clock | |
| Hardware clock (real-time clock) | Yes |
| battery-backed and synchronizable | Yes |
| Resolution | 1 ms |
| Runtime meter | |
| Number | 8 |
| Clock synchronization | |
| supported | Yes |
| to MPI, master | Yes |
| to MPI, slave | Yes |
| to DP, master | Yes |
| to DP, slave | Yes |
| in AS, master | Yes |
| in AS, slave | Yes |
| S7 message functions | |
| Number of login stations for message functions, max. | 8 |
| Symbol-related messages | Yes |
| Block related messages | Yes |
| Alarm 8-blocks | Yes |
| Process control messages | Yes |
| Test commissioning functions | |
| Status/control | |
| Status/control variable | Yes |
| Forcing | |
| Forcing | Yes |
| Status block | Yes |
| Single step | Yes |
| Number of breakpoints | 4 |
| Diagnostic buffer | |

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| present | Yes |
| Number of entries, max. | 400 |
| can be set | Yes |
| Communication functions | |
| PG/OP communication | Yes |
| Routing | Yes |
| Global data communication | |
| supported | Yes |
| Number of GD packets, transmitter, max. | 8 |
| Number of GD packets, receiver, max. | 16 |
| Size of GD packets, max. | 64 byte |
| S7 basic communication | |
| supported | Yes |
| User data per job, max. | 76 byte |
| S7 communication | |
| supported | Yes |
| as server | Yes |
| as client | Yes |
| User data per job, max. | 64 Kibyte |
| S5-compatible communication | |
| supported | Yes ; via CP and FC AG_SEND and FC AG_RECV |
| User data per job, max. | 8 Kibyte |
| Standard communication (FMS) | |
| supported | Yes ; Via CP and loadable FB |
| Number of connections | |
| overall | 32 ; of which one is reserved for PG and OP |
| reserved for PG communication | 1 |
| Adjustable for PG communication, max. | 0 |
| reserved for OP communication | 1 |
| adjustable for OP communication, max. | 0 |
| Reserved for S7 basic communication | 0 |
| adjustable for S7 basic communication, max. | 0 |
| reserved for S7 communication | 0 |
| Adjustable for S7 communication, max. | 0 |
| Reserved for routing | 0 |

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| adjustable for routing, max. | 0 |
| 1st interface | |
| Physics | RS 485 / PROFIBUS |
| Isolated | Yes |
| Number of connection resources | MPI: 32, DP: 16 |
| Functionality | |
| MPI | Yes |
| DP master | Yes |
| DP slave | Yes |
| MPI | |
| Number of connections | 32 |
| Services | |
| PG/OP communication | Yes |
| Routing | Yes |
| Global data communication | Yes |
| S7 basic communication | Yes |
| S7 communication | Yes |
| Transmission speeds, max. | 12 Mbit/s |
| DP master | |
| Number of connections, max. | 16 |
| Services | |
| PG/OP communication | Yes |
| Routing | Yes |
| Global data communication | No |
| S7 basic communication | No |
| S7 communication | Yes |
| Equidistance mode support | Yes |
| SYNC/FREEZE | Yes |
| Activation/deactivation of DP slaves | Yes |
| Direct data exchange (slave-to-slave communication) | Yes |
| Transmission speeds, max. | 12 Mbit/s |
| Number of DP slaves, max. | 32 |
| DP slave | |
| Services | |
| PG/OP communication | Yes ; with interface active |

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| Routing | Yes ; with interface active |
| Transmission speeds, max. | 12 Mbit/s |
| Transfer memory | |
| Inputs | 244 byte |
| Outputs | 244 byte |
| Address area, max. | 32 |
| User data per address area, max. | 32 byte |
| User data per address area, of which consistent, max. | 32 byte |
| 2nd interface | |
| Physics | RS 485 / PROFIBUS |
| Isolated | Yes |
| Number of connection resources | 16 |
| Functionality | |
| DP master | Yes |
| DP slave | Yes |
| DP master | |
| Number of connections, max. | 16 |
| Services | |
| PG/OP communication | Yes |
| Routing | Yes |
| Global data communication | No |
| S7 basic communication | No |
| S7 communication | Yes |
| Equidistance mode support | Yes |
| SYNC/FREEZE | Yes |
| Activation/deactivation of DP slaves | Yes |
| Direct data exchange (slave-to-slave communication) | Yes |
| Transmission speeds, max. | 12 Mbit/s |
| Number of DP slaves, max. | 96 |
| Address area | |
| Address area, max. | 6 Kibyte ; 6 KB/6 KB |
| DP slave | |
| Services | |
| Routing | Yes ; with interface active |
| Programming | Yes ; when interface active |

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| Transmission speeds, max. | 12 Mbit/s |
| Transfer memory | |
| Inputs | 244 byte |
| Outputs | 244 byte |
| Address area, max. | 32 |
| User data per address area, max. | 32 byte |
| User data per address area, of which consistent, max. | 32 byte |
| Isochronous mode | |
| Isochronous mode | Yes |
| User data per isochronous slave, max. | 128 byte |
| equidistance | Yes |
| shortest clock pulse | 5 ms ; 2.5 ms without using the SFCs 126 / 127 |
| CiR - Configuration in RUN | |
| CiR synchronization time, basic load | 100 ms |
| CiR synchronization time, time per I/O slave | 120 µs |
| CPU/ programming | |
| Programming language | |
| STEP 7 | Yes |
| LAD | Yes |
| FBD | Yes |
| STL | Yes |
| SCL | Yes |
| CFC | Yes |
| GRAPH | Yes |
| HiGraph® | Yes |
| Nesting levels | 8 |
| [nicht versorgt: TAK_AB744_001_000] | |
| User program protection/password protection | Yes |
| Dimensions | |
| Required slots | 1 |
| Dimensions and weight | |
| Dimensions and weight | |
| Width | 25 mm |
| Height | 290 mm |
| Depth | 219 mm |

Weight

Weight, approx.

720 g

Status

Apr 26, 2010