SIEMENS

## Data sheet 6ES7317-6FF03-0AB0

Figure similar

***Spare part*** SIMATIC S7-300, CPU 317F-2DP, Central processing unit with 1024 KB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface DP master/slave Micro Memory Card required Can be used with software package S7 Distributed Safety V5.2 SP1 or higher

| | |
|---|---|
| **General information** | |
| HW functional status | 01 |
| Firmware version | V2.6 |
| Engineering with | |
| ● Programming package | STEP 7 V5.2 SP1 or higher with hardware update; S7 Distributed Safety V5.2 SP1 or higher |
| **Supply voltage** | |
| Rated value (DC) | 24 V |
| 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. |
| **Input current** | |
| Current consumption (in no-load operation), typ. | 100 mA |
| Inrush current, typ. | 2.5 A |
| $I^2t$ | 1 $A^2 \cdot s$ |
| **Power loss** | |
| Power loss, typ. | 4 W |
| **Memory** | |
| Work memory | |
| ● integrated | 1 024 kbyte |
| ● expandable | No |
| Load memory | |
| ● Plug-in (MMC) | Yes |
| ● Plug-in (MMC), max. | 8 Mbyte |
| ● Data management on MMC (after last programming), min. | 10 a |
| Backup | |
| ● present | Yes; Guaranteed by MMC (maintenance-free) |
| ● without battery | Yes; Program and data |
| **CPU processing times** | |
| for bit operations, typ. | 0.05 µs |
| for bit operations, max. | 0.05 µs |
| for word operations, typ. | 0.2 µs |
| for fixed point arithmetic, typ. | 0.2 µs |
| for floating point arithmetic, typ. | 1 µs |
| **CPU-blocks** | |
| Number of blocks (total) | 2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used. |
| DB | |
| ● Number, max. | 2 047; Number band: 1 to 2047 |


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| | |
|---|---|
| ● Size, max. | 64 kbyte |
| FB | |
| ● Number, max. | 2 048; Number range: 0 to 2047 |
| ● Size, max. | 64 kbyte |
| FC | |
| ● Number, max. | 2 048; Number range: 0 to 2047 |
| ● Size, max. | 64 kbyte |
| OB | |
| ● Number, max. | see instruction list |
| ● 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 | 5; OB 80, 82, 85, 86, 87 |
| ● Number of synchronous error OBs | 2; OB 121, 122 |
| Nesting depth | |
| ● per priority class | 16 |
| ● additional within an error OB | 4 |
| **Counters, timers and their retentivity** | |
| S7 counter | |
| ● Number | 512 |
| Retentivity | |
| — adjustable | Yes |
| — preset | 8 |
| Counting range | |
| — adjustable | Yes |
| — counting range / of S7 counters / initial value | 0 |
| — counting range / of S7 counters / full-scale value | 999 |
| IEC counter | |
| ● present | Yes |
| ● Type | SFB |
| ● Number | Unlimited (limited only by RAM capacity) |
| S7 times | |
| ● Number | 512 |
| Retentivity | |
| — adjustable | Yes |
| — preset | No retentivity |
| Time range | |
| — time range / of the S7 timers / initial value | 10 ms |
| — time range / of the S7 timers / full-scale value | 9 990 s |
| IEC timer | |
| ● present | Yes |
| ● Type | SFB |
| ● Number | Unlimited (limited only by RAM capacity) |
| **Data areas and their retentivity** | |
| Retentive data area (incl. timers, counters, flags), max. | 256 kbyte |
| Flag | |
| ● Size, max. | 4 096 byte |
| ● Retentivity available | Yes; From MB 0 to MB 4 095 |
| ● Retentivity preset | MB 0 to MB 15 |
| ● Number of clock memories | 8; 1 memory byte |
| Data blocks | |
| ● Retentivity adjustable | Yes; via non-retain property on DB |
| ● Retentivity preset | Yes |
| Local data | |
| ● per priority class, max. | 1 024 byte |


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| | |
|---|---|
| **Address area** | |
| I/O address area | |
| ● Inputs | 8 kbyte |
| ● Outputs | 8 kbyte |
| of which distributed | |
| — Inputs | 8 kbyte |
| — Outputs | 8 kbyte |
| Process image | |
| ● Inputs | 1 024 byte |
| ● Outputs | 1 024 byte |
| Digital channels | |
| ● Inputs | 65 536 |
| — of which central | 1 024 |
| ● Outputs | 65 536 |
| — of which central | 1 024 |
| Analog channels | |
| ● Inputs | 4 096 |
| — of which central | 256 |
| ● Outputs | 4 096 |
| — of which central | 256 |
| **Hardware configuration** | |
| Number of expansion units, max. | 3 |
| Number of DP masters | |
| ● integrated | 2 |
| ● via CP | 4 |
| Number of operable FMs and CPs (recommended) | |
| ● FM | 8 |
| ● CP, PtP | 8 |
| ● CP, LAN | 10 |
| Rack | |
| ● Racks, max. | 4 |
| ● Modules per rack, max. | 8 |
| **Time of day** | |
| Clock | |
| ● Hardware clock (real-time) | Yes |
| ● retentive and synchronizable | Yes |
| ● Backup time | 6 wk; At 40 °C ambient temperature |
| ● Deviation per day, max. | 10 s |
| Operating hours counter | |
| ● Number | 4 |
| ● Number/Number range | 0 to 3 |
| ● Range of values | 0 to 2^31 hours (when using SFC 101) |
| ● Granularity | 1 h |
| ● retentive | Yes; Must be restarted at each restart |
| Clock synchronization | |
| ● supported | Yes |
| ● to MPI, master | Yes |
| ● to MPI, slave | Yes |
| ● to DP, master | Yes; With DP slave only slave clock |
| ● to DP, slave | Yes |
| ● in AS, master | Yes |
| ● in AS, slave | Yes |
| **Digital inputs** | |
| integrated channels (DI) | 0 |
| **Digital outputs** | |
| integrated channels (DO) | 0 |
| **Analog inputs** | |
| integrated channels (AI) | 0 |
| **Analog outputs** | |
| integrated channels (AO) | 0 |


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|---|---|
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 0 |
| Number of PROFINET interfaces | 0 |
| Number of RS 485 interfaces | 2 |
| Number of RS 422 interfaces | 0 |
| **1. Interface** | |
| Interface type | Integrated RS 485 interface |
| Isolated | Yes |
| Interface types | |
| ● RS 485 | Yes |
| ● Output current of the interface, max. | 200 mA |
| Protocols | |
| ● MPI | Yes |
| ● PROFIBUS DP master | Yes |
| ● PROFIBUS DP slave | Yes |
| ● Point-to-point connection | No |
| MPI | |
| ● Number of connections | 32 |
| ● Transmission rate, max. | 12 Mbit/s |
| Services | |
| — PG/OP communication | Yes |
| — Routing | Yes |
| — Global data communication | Yes |
| — S7 basic communication | Yes |
| — S7 communication | Yes |
| — S7 communication, as client | No |
| — S7 communication, as server | Yes |
| PROFIBUS DP master | |
| ● Transmission rate, max. | 12 Mbit/s |
| ● Number of DP slaves, max. | 124 |
| Services | |
| — PG/OP communication | Yes |
| — Routing | Yes |
| — Global data communication | No |
| — S7 basic communication | Yes |
| — S7 communication | Yes |
| — S7 communication, as client | No |
| — S7 communication, as server | Yes |
| — Equidistance | Yes |
| — Isochronous mode | No |
| — SYNC/FREEZE | Yes |
| — Activation/deactivation of DP slaves | Yes |
| — DPV1 | Yes |
| Address area | |
| — Inputs, max. | 244 byte |
| — Outputs, max. | 244 byte |
| PROFIBUS DP slave | |
| ● Transmission rate, max. | 12 Mbit/s |
| ● automatic baud rate search | Yes; only with passive interface |
| ● Address area, max. | 32 |
| ● User data per address area, max. | 32 byte |
| Services | |
| — Routing | Yes; Only with active interface |
| — Global data communication | No |
| — S7 basic communication | Yes |
| — S7 communication | Yes |
| — S7 communication, as client | No |
| — S7 communication, as server | Yes |
| — Direct data exchange (slave-to-slave communication) | Yes |
| — DPV1 | No |


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|---|---|
| Transfer memory | |
| — Inputs | 244 byte |
| — Outputs | 244 byte |
| **2. Interface** | |
| Interface type | Integrated RS 485 interface |
| Isolated | Yes |
| Interface types | |
| ● RS 485 | Yes |
| ● Output current of the interface, max. | 200 mA |
| Protocols | |
| ● MPI | No |
| ● PROFIBUS DP master | Yes |
| ● PROFIBUS DP slave | Yes |
| ● Point-to-point connection | No |
| PROFIBUS DP master | |
| ● Number of connections, max. | 32 |
| ● Transmission rate, max. | 12 Mbit/s |
| ● Number of DP slaves, max. | 124 |
| Services | |
| — PG/OP communication | Yes |
| — Routing | Yes |
| — Global data communication | No |
| — S7 basic communication | Yes |
| — S7 communication | Yes |
| — S7 communication, as client | No |
| — S7 communication, as server | Yes |
| — Equidistance | Yes |
| — Isochronous mode | Yes; OB 61 |
| — SYNC/FREEZE | Yes |
| — Activation/deactivation of DP slaves | Yes |
| — DPV1 | Yes |
| Address area | |
| — Inputs, max. | 244 byte |
| — Outputs, max. | 244 byte |
| PROFIBUS DP slave | |
| ● Number of connections | 32 |
| ● GSD file | http://support.automation.siemens.com in Product Support area |
| ● Transmission rate, max. | 12 Mbit/s |
| ● automatic baud rate search | Yes; only with passive interface |
| ● Address area, max. | 32 |
| ● User data per address area, max. | 32 byte |
| Services | |
| — PG/OP communication | Yes |
| — Routing | Yes; with interface active |
| — Global data communication | No |
| — S7 basic communication | Yes |
| — S7 communication | Yes |
| — S7 communication, as client | No |
| — S7 communication, as server | Yes |
| — Direct data exchange (slave-to-slave communication) | Yes |
| — DPV1 | No |
| Transfer memory | |
| — Inputs | 244 byte |
| — Outputs | 244 byte |
| **Protocols** | |
| PROFIsafe | Yes |
| **communication functions / header** | |
| PG/OP communication | Yes |
| Global data communication | |
| ● supported | Yes |


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| | |
|---|---|
| ● Number of GD loops, max. | 8 |
| ● Number of GD packets, max. | 8 |
| ● Number of GD packets, transmitter, max. | 8 |
| ● Number of GD packets, receiver, max. | 8 |
| ● Size of GD packets, max. | 22 byte |
| ● Size of GD packet (of which consistent), max. | 22 byte |
| S7 basic communication | |
| ● communication function / S7 basic communication | Yes |
| ● User data per job, max. | 76 byte |
| ● User data per job (of which consistent), max. | 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) |
| S7 communication | |
| ● supported | Yes |
| ● as server | Yes |
| ● as client | Yes; Via CP and loadable FB |
| ● User data per job, max. | 180 byte; With PUT/GET |
| ● User data per job (of which consistent), max. | 160 byte; as server |
| S5 compatible communication | |
| ● supported | Yes; via CP and loadable FC |
| Number of connections | |
| ● overall | 32 |
| ● usable for PG communication | 31 |
| — reserved for PG communication | 1 |
| — adjustable for PG communication, min. | 1 |
| — adjustable for PG communication, max. | 31 |
| ● usable for OP communication | 31 |
| — reserved for OP communication | 1 |
| — adjustable for OP communication, min. | 1 |
| — adjustable for OP communication, max. | 31 |
| ● usable for S7 basic communication | 30 |
| — reserved for S7 basic communication | 0 |
| — adjustable for S7 basic communication, min. | 0 |
| — adjustable for S7 basic communication, max. | 30 |
| ● usable for routing | 8 |
| **S7 message functions** | |
| Number of login stations for message functions, max. | 32; Depending on the configured connections for PG/OP and S7 basic communication |
| Process diagnostic messages | Yes |
| simultaneously active Alarm-S blocks, max. | 60 |
| **Test commissioning functions** | |
| Status block | Yes |
| Single step | Yes |
| Number of breakpoints | 2 |
| Status/control | |
| ● Status/control variable | Yes |
| ● Variables | Inputs, outputs, memory bits, DB, times, counters |
| ● Number of variables, max. | 30 |
| — of which status variables, max. | 30 |
| — of which control variables, max. | 14 |
| Forcing | |
| ● Forcing | Yes |
| ● Forcing, variables | Inputs, outputs |
| ● Number of variables, max. | 10 |
| Diagnostic buffer | |
| ● present | Yes |
| ● Number of entries, max. | 100 |
| — adjustable | No |
| **configuration / header** | |
| Configuration software | |
| ● STEP 7 | Yes; V5.2 SP1 or higher |
| configuration / programming / header | |


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| | |
|---|---|
| ● Command set | see instruction list |
| ● Nesting levels | 8 |
| ● System functions (SFC) | see instruction list |
| ● System function blocks (SFB) | see instruction list |
| Programming language | |
| — LAD | Yes |
| — FBD | Yes |
| — STL | Yes |
| — SCL | Yes |
| — CFC | Yes |
| — GRAPH | Yes |
| — HiGraph® | Yes |
| Know-how protection | |
| ● User program protection/password protection | Yes |
| **Dimensions** | |
| Width | 80 mm |
| Height | 125 mm |
| Depth | 130 mm |
| **Weights** | |
| Weight, approx. | 460 g |

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