SIEMENS

Data sheet

6ES7317-7TK10-0AB0



SIMATIC S7-300, CPU 317T-3 PN/DP, Central processing unit for PLC and technology tasks, 1024 KB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface DP (drive), 3rd interface Ethernet PROFINET with 2-port switch, Integr. I/O for technology, Front connector (1x 40-pole) and Micro Memory Card min. 8 MB required

| Rated value (DC) 24 V permissible range, lower limit (DC) 19.2 V permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) 2 A min. Load voltage L+ • • Rated value (DC) 24 V • Rated value (DC) 24 V • Reverse polarity protection Yes Digital outputs - - Rated value (DC) 24 V, 2L+ - Reverse polarity protection No; 2L+ Input current 1 050 mA Current consumption (rated value) 1 050 mA Current consumption (in no-load operation), typ. 230 mA Innush current, typ. 6.5 A Pt 1 A*s Power loss, typ. 7.5 W Memory • • integrated 1 024 kbyte • expandable No Load memory • • 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 | General information | |
|--|---|---|
| Product function Yes • Programming package Yes; Via PROFIBUS DP or PROFINET interface Engineering with • Programming package STEP 7 Vs.5 SP2 or higher and S7-Technology option package V4.2 SP3 Supply voltage - Rated value (DC) 24 V permissible range, lower limit (DC) 19.2 V permissible range, lower limit (DC) 28.8 V external protection for power supply lines (recommendation) 2.4 min. Load voltage 1+ - • Rated value (DC) 24 V • Rated value (DC) 24 V • Reverse polarity protection Yes Digital outputs - - Rated value (DC) 24 V 21+ - Reverse polarity protection No; 21+ Input current - Current consumption (rated value) 1050 mA Current consumption (in no-load operation), typ. 230 mA Innush current, typ. 6 5 A Power loss, typ. - Power loss, typ. No Load memory - • Integrated 1024 koyte • expandable No </td <td>HW functional status</td> <td>01</td> | HW functional status | 01 |
| • Isochronous modeYes; Via PROFIBUS DP or PROFINET interfaceEngineering withForgramming packageSTE 7 V5.5 SP2 or higher and S7.Technology option package V4.2 SP3Sypply orlogsRated value (DC)24 Vpermissible range, upper limit (DC)28.8 Vpermissible range, upper limit (DC)28.8 Vpermissible range, upper limit (DC)28.8 Voverlang upper limit (DC)28.8 Vexternal protection for power supply lines (recommendation)2 A min.Load value (DC)24 V- Rated value (DC)24 V 2- Rated value (DC)24 V 2,1+- Rated value (DC)24 V, 2,1+- Rated value (DC)23 O mA- Rated value (DC)23 O mA- Reverse polarity protectionNo; 2,1+Insult current230 mACurrent consumption (rated value)1050 mACurrent consumption (no no-load operation), typ.65 AInsult current, typ.7.5 WPower loss7.5 WPower lossNoVer standableNoLoad memory104 kbyte• Integrated1024 kbyte• expandableNoLoad memory10 a• Plug-in (MMC)8 Moyte• Plug-in (MMC)10 a• Plug-in (MMC)9.8 Moyte• Plug-in (MMC)10 a• Plug-in (MMC)Yes; Forgram and data• Plug-in (MMC)Yes; Porgram and data• Plug-in (MMC)Yes; Porgram and data• Plug-in (IMC)Yes; Porgram and data <t< td=""><td>Firmware version</td><td>CPU: V3.2; integrated technology V4.1.5</td></t<> | Firmware version | CPU: V3.2; integrated technology V4.1.5 |
| Engineering with • Programming package STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3 Supply voltage • Rated value (DC) 24 V permissible range, lower limit (DC) 28.8 V external protection for power supply lines (recommendation) 2 A win. • Rated value (DC) 24 V • Reverse polarity protection Yes • Current consumption (rated value) 1050 mA • Current consumption (rated value) 1050 mA • Reverse polarity protection Yes • Power loss typ. 7.5 W • Power loss, typ. 1024 koyte • expandable No • Load memory | Product function | |
| • Programming packageSTEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3Supply voltageRated value (DC)4 Vpermissible range, uoper limit (DC)28.8 Vpermissible range, uoper limit (DC)24. Nin.Load voltage 1• Rated value (DC)24. V• Rated value (DC)24. V• Rated value (DC)24. V• Rated value (DC)24. V Rate value (DC)20. Man Rate value (DC)20. Man Rue (rate (DC)20. Man. <td>Isochronous mode</td> <td>Yes; Via PROFIBUS DP or PROFINET interface</td> | Isochronous mode | Yes; Via PROFIBUS DP or PROFINET interface |
| Supply voltage 24 V Rated value (DC) 24 V permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) 2.A min. Load voltage L+ | Engineering with | |
| Rated value (DC) 24 V permissible range, lower limit (DC) 192 V permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) 2 A min. Load voltage L+ 2 A v • Rated value (DC) 24 V • Reverse polarity protection Yes Digital outputs | Programming package | STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3 |
| permissible range, lower limit (DC) 19.2 V permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) 2.4 min. Load voltage L+ - - Rated value (DC) 24 V - Rated value (DC) 24 V: 2L+ - Rated value (DC) 24 V: 2L+ - Rated value (DC) 24 V: 2L+ - Rated value (DC) 230 mA Inrush current 230 mA Current consumption (rated value) 1050 mA Current tonsumption (rated value) 6.5 A Pt 1A*s Power loss - Power loss, typ. 7.5 W Memory - • integrated 1024 kbyte • expandable No Load memory - • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup - • present Yes; Forgram and data • without battery Yes; Forgram and data | Supply voltage | |
| permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) 2 A min. Load voltage L+ • • Rated value (DC) 24 V • Rated value (DC) 24 V; 2L+ - Rated value (DC) 24 V; 2L+ - Reverse polarity protection No; 2L+ Input current Verse Current consumption (rated value) 1 050 mA Current consumption (rated value) 1 050 mA Current consumption (rated value) 1 050 mA Power loss 75 M Power loss Verse separated Power loss 7.5 W Memory 1 024 kbyte • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max, 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • present Yes; Program and data CPU processing times No.25 µs | Rated value (DC) | 24 V |
| external protection for power supply lines (recommendation) 2 A min. Load voltage L+ FReverse polarity protection 24 V • Reverse polarity protection 24 V; 2L+ Preverse polarity protection Digital outputs | permissible range, lower limit (DC) | 19.2 V |
| Load voltage L+ • Rated value (DC) • Reverse polarity protection - Rated value (DC) - Rated value (DC) - Rated value (DC) - Rated value (DC) - Reverse polarity protection - Reverse polarity protection - Reverse polarity protection - Reverse polarity protection - Integrated - Integrated - Integrated - Plug-in (MMC) man. - Plug-in (MMC), max. - Plug-in (MMC), max. - Plug-in (MMC), max. - Plug-in (MMC), max. - Present - present | permissible range, upper limit (DC) | 28.8 V |
| Rade value (DC)24 V• Reverse polarity protectionYesDigital outputs Rated value (DC)24 V; 2L+- Reverse polarity protectionNo; 2L +Input current1050 mACurrent consumption (rated value)1050 mACurrent consumption (in no-load operation), typ.230 mAInrush current, typ.6.5 APreverse polarity protection1.4²-sPower loss, typ.7.5 WPower loss, typ.7.5 WMemoryIntegrated• Integrated1.024 kbyte• spandableNoLoad memoryYes• Plug-in (MKC), max.8 Mbyte• Plug-in (MKC), max.8 Mbyte• Data management on MMC (after last programming), min.8 Scaurateed by MMC (maintenance-free)• without batteryYes; Carranteed by MMC (maintenance-free)• without batteryYes; Program and dataCPU processing times0.025 µs | external protection for power supply lines (recommendation) | 2 A min. |
| • Reverse polarity protection Yes Digital outputs 24 V; 2L+ Rated value (DC) 24 V; 2L+ Reverse polarity protection 005 2L+ Input current 005 2L+ Current consumption (rated value) 1 050 mA Current consumption (rated value) 230 mA Current consumption (in no-load operation), typ. 230 mA Inrush current, typ. 6.5 A Prower loss 75 W Power loss, typ. 7.5 W Memory 75 W • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 µs | Load voltage L+ | |
| Digital outputs Rated value (DC) 24 V; 2L+ Reverse polarity protection No; 2L+ Input current 230 mA Current consumption (rated value) 1 050 mA Current consumption (no-load operation), typ. 230 mA Inrush current, typ. 6.5 A Pt 1 A*s Power loss, typ. 7.5 W Memory 1 024 kbyte • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup vers; Suaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 µs | Rated value (DC) | 24 V |
| Rated value (DC)24 V; 2L+ Reverse polarity protectionNo; 2L+Input currentCurrent consumption (rated value)1050 mACurrent consumption (in no-load operation), typ.230 mAInrush current, typ.6.5 APt1 A²-sPower lossPower loss, typ.7.5 WMemory1024 kbyte• integratedNoLoad memoryNo• Plug-in (MMC)Yes• Plug-in (MMC), max.8 Mbyte• Data management on MMC (after last programming), min.10 aBackupYes; Guaranteed by MMC (maintenance-free)• without batteryYes; Program and dataCPU processing times0.025 µs | Reverse polarity protection | Yes |
| Reverse polarity protection No; 2L+ Input current 1 050 mA Current consumption (rated value) 1 050 mA Current consumption (in no-load operation), typ. 230 mA Inrush current, typ. 6.5 A I't 1 A²-s Power loss 7.5 W Memory 000000000000000000000000000000000000 | Digital outputs | |
| Input current Current consumption (rated value) 1 050 mA Current consumption (in no-load operation), typ. 230 mA Inrush current, typ. 6.5 A I*t 1 A*s Power loss, typ. 7.5 W Memory Work memory • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 µs | — Rated value (DC) | 24 V; 2L+ |
| Current consumption (rated value) 1 050 mA Current consumption (in no-load operation), typ. 230 mA Inrush current, typ. 6.5 A I²t 1 A²-s Power loss 7.5 W Memory 7.5 W Memory 1 024 kbyte • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 µs | Reverse polarity protection | No; 2L+ |
| Current consumption (in no-load operation), typ. 230 mA Inrush current, typ. 6.5 A IPt 1 A²-s Power loss Power loss, typ. Power loss, typ. Power loss, typ. Vork memory • integrated • integrated 1 024 kbyte • expandable No Load memory 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. 0.025 µs | Input current | |
| Inrush current, typ. 6.5 A IPt 1 A²-s Power loss Power loss, typ. Power loss, typ. 7.5 W Memory • integrated 1 024 kbyte • expandable No Load memory Vers • Plug-in (MMC), max. 8 Mbyte • 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. 0.025 µs | Current consumption (rated value) | 1 050 mA |
| I* 1 A²-s Power loss 7.5 W Power loss, typ. 7.5 W Memory 1 024 kbyte • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • present Yes; Program and data CPU processing times 0.025 µs | Current consumption (in no-load operation), typ. | 230 mA |
| Power loss Power loss, typ. 7.5 W Memory Memory Work memory 1 024 kbyte • integrated 1 024 kbyte • expandable No Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Yes; Guaranteed by MMC (maintenance-free) • present Yes; Program and data CPU processing times 0.025 µs | Inrush current, typ. | 6.5 A |
| Power loss, typ. 7.5 W Memory Vork memory • integrated 1 024 kbyte • expandable No Load memory Ves • Plug-in (MMC) Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup Ves; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 μs | l²t | 1 A ² ·s |
| 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 10 a expresent Yes; Guaranteed by MMC (maintenance-free) without battery Yes; Program and data CPU processing times 0.025 µs | Power loss | |
| 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. 0.025 µs | Power loss, typ. | 7.5 W |
| • integrated 1 024 kbyte • expandable No Load memory Image: Constraint of the second of the seco | Memory | |
| 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 0.025 μs | Work memory | |
| Load memory Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup | integrated | 1 024 kbyte |
| • Plug-in (MMC) Yes • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup | expandable | No |
| • Plug-in (MMC), max. 8 Mbyte • Data management on MMC (after last programming), min. 10 a Backup • present • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 μs | Load memory | |
| • Data management on MMC (after last programming), min. 10 a Backup • present • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 μs | • Plug-in (MMC) | Yes |
| min. Backup | • Plug-in (MMC), max. | 8 Mbyte |
| • present Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times 0.025 μs | | 10 a |
| • without battery Yes; Program and data CPU processing times for bit operations, typ. 0.025 µs | Backup | |
| CPU processing times for bit operations, typ. 0.025 µs | • present | Yes; Guaranteed by MMC (maintenance-free) |
| for bit operations, typ. 0.025 µs | without battery | Yes; Program and data |
| | CPU processing times | |
| for word operations, typ. 0.03 µs | for bit operations, typ. | 0.025 μs |
| | for word operations, typ. | 0.03 µs |

| for fixed point arithmetic, typ | 0.04 us |
|---|---|
| for fixed point arithmetic, typ. for floating point arithmetic, typ. | 0.04 μs 0.16 μs |
| PU-blocks | 0.10 µS |
| | 2.049: (DDa ECa EDa): the maximum number of leadable blacks can be |
| 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. | 2 048; Number range: 1 to 16000 |
| • Size, max. | 64 kbyte |
| FB | |
| • Number, max. | 2 048; Number range: 0 to 7999 |
| • Size, max. | 64 kbyte |
| FC | |
| • Number, max. | 2 048; Number range: 0 to 7999 |
| • 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 - isochronous mode is possible either on DP or PROFINET IO (not simultaneously) |
| Number of technology synchronous alarm OBs | 1; OB 65 |
| 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 |
| Nesting depth | |
| per priority class | 16 |
| additional within an error OB | 4 |
| ounters, timers and their retentivity | |
| S7 counter | |
| Number | 512 |
| Retentivity | |
| — adjustable | Yes |
| — lower limit | 0 |
| — upper limit | 511 |
| — preset | Z 0 to Z 7 |
| Counting range | |
| — adjustable | Yes |
| — lower limit | 0 |
| — upper limit | 999 |
| IEC counter | |
| • present | Yes |
| • Туре | SFB |
| Number | Unlimited (limited only by RAM capacity) |
| S7 times | |
| Number | 512 |
| Retentivity | |
| — adjustable | Yes |
| — lower limit | 0 |
| — upper limit | 511 |
| — preset | No retentivity |
| Time range | |
| — lower limit | 10 ms |
| — upper limit | 9 990 s |
| IEC timer | |
| | |
| ● present ● Type | Yes 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. | 32 768 byte; Max. 2048 bytes per block |
| Address area | |
| I/O address area | |
| Inputs | 8 192 byte |
| Outputs | 8 192 byte |
| of which distributed | |
| — Inputs | 8 192 byte |
| — Outputs | 8 192 byte |
| Process image | |
| Inputs | 8 192 byte |
| • Outputs | 8 192 byte |
| Inputs, adjustable | 8 192 byte |
| | 8 192 byte |
| Outputs, adjustable | |
| Inputs, default | 256 byte |
| • Outputs, default | 256 byte |
| Default addresses of the integrated channels | |
| — Digital inputs | 66 |
| — Digital outputs | 66 |
| | |
| Subprocess images | |
| Number of subprocess images, max. | 1; With PROFINET IO, the length of the user data is limited to 1600 bytes |
| | 1; With PROFINET IO, the length of the user data is limited to 1600 bytes |
| Number of subprocess images, max. | 1; With PROFINET IO, the length of the user data is limited to 1600 bytes 65 536 |
| Number of subprocess images, max. Digital channels | |
| Number of subprocess images, max. Digital channels Inputs | 65 536 |
| Number of subprocess images, max. Digital channels Inputs of which central | 65 536 256 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs | 65 536 256 65 536 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central | 65 536 256 65 536 |
| Number of subprocess images, max. Digital channels Inputs — of which central Outputs — of which central Analog channels Inputs | 65 536 256 65 536 256 4 096 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central | 65 536 256 65 536 256 4 096 64 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs | 65 536 256 65 536 256 4 096 64 4 096 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central | 65 536 256 65 536 256 4 096 64 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Outputs of which central Analog channels Inputs of which central Outputs of which central Hardware configuration | 65 536 256 65 536 256 4 096 64 4 096 64 4 096 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels of which central Analog channels of which central Outputs | 65 536 256 65 536 256 4 096 64 4 096 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Muther configuration Number of expansion units, max. Number of DP masters | 65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of DP masters integrated | 65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of DP masters integrated via CP | 65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Analog channels Inputs of which central Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) | 65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM | 65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP | 65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM | 65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP | 65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN | 65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels inputs of which central Analog channels inputs of which central Mumber of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack | 65 536 256 65 536 256 4 096 64 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Outputs of which central Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. | 65 536 256 65 536 256 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. | 65 536 256 65 536 256 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock | 65 536 256 65 536 256 4 096 64 4 096 64 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Racks Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) | 65 536 256 65 536 256 4 096 64 4 096 64 0 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8 8 8 8 8 8 8 8 8 8 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Hardware configuration Number of P masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) retentive and synchronizable | 65 536 256 65 536 256 4 096 64 4 096 64 0 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8 8 8 8 8 8 8 8 8 8 |
| Number of subprocess images, max. Digital channels Inputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Outputs of which central Analog channels Inputs of which central Analog channels Inputs of which central Outputs of which central Hardware configuration Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Racks Racks, max. Modules per rack, max. Time of day Clock Hardware clock (real-time) | 65 536 256 65 536 256 4 096 64 4 096 64 0 2; 1 DP and 1 DP (drive) 2; for DP 8 8 8 8 8 8 8 8 8 8 8 8 8 |

| Behavior of the clock following POWER-ON | Clock continues running after POWER OFF |
|---|---|
| Behavior of the clock following expiry of backup period | the clock continues at the time of day it had when power was switched off |
| Operating hours counter | |
| Number | 4 |
| Number/Number range | 0 to 3 |
| Range of values | 0 to 2^31 hours (when using SFC 101) |
| • Granularity | 1h |
| • retentive | Yes; Must be restarted at each restart |
| Clock synchronization | |
| • supported | Yes |
| • to MPI, master | Yes |
| • to MPI, slave | Yes |
| • to DP, master | Yes |
| • to DP, slave | Yes; Only time-of-day slave |
| • in AS, master | Yes |
| • in AS, slave | Yes |
| on Ethernet via NTP | Yes; As client |
| Digital inputs | |
| Number of digital inputs | 4 |
| of which inputs usable for technological functions | 4 |
| Input characteristic curve in accordance with IEC 61131, type 1 | Yes |
| Number of simultaneously controllable inputs | |
| horizontal installation | |
| — up to 40 °C, max. | 4 |
| — up to 60 °C, max. | 4 |
| vertical installation | |
| — up to 40 °C, max. | 4 |
| Input voltage | 04.14 |
| Rated value (DC) | 24 V |
| • for signal "0" | -3 to +5V |
| • for signal "1" | +15 to +30 V |
| Input current | 7 mA |
| • for signal "1", typ. | 7 ma |
| Input delay (for rated value of input voltage) | |
| for technological functions — at "0" to "1", max. | 10 up; Typical |
| — at "1" to "0", max. | 10 μs; Typical 10 μs; Typical |
| Cable length | TO ps, Typical |
| • shielded, max. | 1 000 m |
| • shelded, max. Digital outputs | 1 000 11 |
| | |
| Number of digital outputs | 8 |
| of which high-speed outputs | 8 for technology functions, e.g. high speed com switch signals |
| Functions | for technology functions, e.g. high-speed cam switch signals |
| Short-circuit protection | Yes |
| Response threshold, typ. | 1A 48.1/ |
| Limitation of inductive shutdown voltage to | 48 V |
| Controlling a digital input | No |
| Switching capacity of the outputs | EW |
| on lamp load, max. | 5 W |
| Load resistance range | 48.0 |
| lower limit | 48 Ω 4 kO |
| upper limit | 4 kΩ |
| Output voltage | 2 \ / (2) \ \ |
| • for signal "0", max. | 3 V; (2L+) |
| for signal "1", min. | Rated voltage -2.5 V |
| Output summat | |
| Output current | |
| • for signal "1" rated value | 0.5 A |
| for signal "1" rated value for signal "1" permissible range for 0 to 60 °C, min. | 0.5 A 5 mA |
| • for signal "1" rated value | 0.5 A |

| • for uprating | No |
|--|---|
| for uprating for redundant control of a load | No |
| Switching frequency | INU |
| with resistive load, max. | 100 Hz |
| | |
| with inductive load, max. | 0.2 Hz; According to IEC 60947-5-1, DC-13 |
| on lamp load, max. Tatel everyte of the outputs (non ensure) | 100 Hz |
| Total current of the outputs (per group) | |
| horizontal installation | 4.4 |
| — up to 40 °C, max. | 4 A |
| — up to 60 °C, max. | 3 A |
| all other mounting positions | 4.4 |
| — up to 40 °C, max. | 4 A |
| Integrated high-speed cams | 70 |
| Switching accuracy (+/-) | 70 µs |
| Cable length | 4.000 |
| shielded, max. | 1 000 m |
| Analog inputs | |
| Number of analog inputs | 0 |
| Analog outputs | |
| Number of analog outputs | 0 |
| Encoder | |
| Connectable encoders | |
| • 2-wire sensor | No |
| Interfaces | |
| Number of industrial Ethernet interfaces | 1 |
| Number of PROFINET interfaces | 1 |
| Number of RS 485 interfaces | 2 |
| Number of RS 422 interfaces | 0 |
| 1. Interface | |
| Interface type | Integrated RS 485 interface |
| | |
| Isolated | Yes |
| | Yes |
| Isolated | Yes Yes |
| Isolated Interface types | |
| Isolated Interface types • RS 485 | Yes 200 mA |
| Isolated Interface types • RS 485 • Output current of the interface, max. | Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols | Yes 200 mA |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI | Yes 200 mA Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master | Yes 200 mA Yes Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave | Yes 200 mA Yes Yes Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection | Yes 200 mA Yes Yes Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI | Yes 200 mA Yes Yes Yes No |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. | Yes 200 mA Yes Yes Yes No |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services | Yes 200 mA Yes Yes Yes No 12 Mbit/s |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication | Yes 200 mA Yes Yes Yes No 12 Mbit/s |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server PROFIBUS DP master | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master • Transmission rate, max. | Yes 200 mA Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. | Yes 200 mA Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication - Routing | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes Yes Yes Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication - Routing - Routing - Routing - Global data communication | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 basic communication - S7 communication - S7 communication | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes Yes No; but via CP and loadable FB Yes No; but via CP and loadable FB Yes |
| Isolated Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server PROFIBUS DP master • Transmission rate, max. • Number of DP slaves, max. Services - PG/OP communication - Routing - Global data communication - Routing - Global data communication - Routing - Global data communication - S7 basic communication - S7 basic communication - S7 basic communication - S7 basic communication | Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB Yes Yes No; but via CP and loadable FB Yes Yes No; but via CP and loadable FB Yes |

| — Equidistance | Yes |
|--|---|
| — Isochronous mode | Yes; OB 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO |
| | |
| - SYNC/FREEZE | Yes |
| — Activation/deactivation of DP slaves | Yes |
| — Number of DP slaves that can be simultaneously activated/deactivated, max. | 8 |
| — Direct data exchange (slave-to-slave | Yes; as subscriber |
| communication) | |
| — DPV1 | Yes |
| Address area | |
| — Inputs, max. | 8 kbyte |
| — Outputs, max. | 8 kbyte |
| User data per DP slave | |
| — 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 | |
| — PG/OP communication | Yes |
| — Routing | Yes; Only with active interface |
| — Global data communication | No |
| — S7 basic communication | No |
| — S7 communication | Yes |
| | No |
| — S7 communication, as client | |
| — S7 communication, as server | Yes; Connection configured on one side only |
| — Direct data exchange (slave-to-slave communication) | Yes |
| — DPV1 | No |
| | |
| | |
| Transfer memory | 244 hvte |
| — Inputs | 244 byte 244 byte |
| — Inputs — Outputs | 244 byte 244 byte |
| - Inputs - Outputs 2. Interface | 244 byte |
| — Inputs — Outputs 2. Interface Interface type | 244 byte Integrated RS 485 interface |
| - Inputs - Outputs 2. Interface Interface type Isolated | 244 byte |
| - Inputs - Outputs 2. Interface Interface type Isolated Interface types | 244 byte Integrated RS 485 interface Yes |
| Inputs Outputs 2. Interface Interface type Isolated Interface types • RS 485 | 244 byte Integrated RS 485 interface Yes Yes |
| Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. | 244 byte Integrated RS 485 interface Yes |
| Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols | 244 byte Integrated RS 485 interface Yes Yes 200 mA |
| Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI | 244 byte Integrated RS 485 interface Yes Yes 200 mA |
| Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master |
| Interface Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No |
| Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master |
| Interface Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No |
| Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master PROFIBUS DP master PROFIBUS DP master Transmission rate, max. | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s |
| Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No |
| Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 |
| Interface Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No |
| Interface Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing | 244 byte Integrated RS 485 interface Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No No No No No Yes No No |
| Interface Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No |
| Interface Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No No No No No No No |
| Interface Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No |
| Interface Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No No No No No No No |
| Interface Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No 12 Mbit/s 64 No |
| Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No |
| Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No No No No No No No No |
| Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No No No No No No No No No |
| Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No I12 Mbit/s 64 No |
| Inputs Outputs 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves DPV1 | 244 byte Integrated RS 485 interface Yes Yes 200 mA No Yes; DP(DRIVE)-Master No No I12 Mbit/s 64 No |

| Outpute may | 1.024 bute |
|---|---|
| — Outputs, max. | 1 024 byte |
| User data per DP slave | 244 bito |
| — Inputs, max. | 244 byte |
| — Outputs, max. | 244 byte |
| PROFIBUS DP slave | |
| • GSD file | http://support.automation.siemens.com in Product Support area |
| Transmission rate, max. | 12 Mbit/s |
| 3. Interface | |
| Interface type | PROFINET |
| Isolated | Yes |
| automatic detection of transmission rate | Yes; 10/100 Mbit/s |
| Autonegotiation | Yes |
| Autocrossing | Yes |
| Change of IP address at runtime, supported | Yes |
| Interface types | |
| RJ 45 (Ethernet) | Yes |
| Number of ports | 2 |
| integrated switch | Yes |
| Protocols | |
| • MPI | No |
| PROFINET IO Controller | Yes; Also simultaneously with IO-Device functionality |
| PROFINET IO Device | Yes; Also simultaneously with IO Controller functionality |
| PROFIBUS DP master | No |
| PROFIBUS DP slave | No |
| Open IE communication | Yes; Via TCP/IP, ISO on TCP, and UDP |
| Web server | Yes |
| Media redundancy | Yes |
| PROFINET IO Controller | |
| Transmission rate, max. | 100 Mbit/s |
| Services | |
| — PG/OP communication | Yes |
| Routing | Yes |
| — S7 communication | Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 |
| — Isochronous mode | Yes; OB 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO |
| — Shared device | Yes |
| — Prioritized startup | Yes |
| Number of IO devices with prioritized startup, max. | 32 |
| — Number of connectable IO Devices, max. | 128 |
| - Of which IO devices with IRT, max. | 64 |
| — of which in line, max. | 64 |
| — Number of connectable IO Devices for RT, max. | 128 |
| — of which in line, max. | 128 |
| Activation/deactivation of IO Devices | Yes |
| — Number of IO Devices that can be simultaneously activated/deactivated, max. | 8 |
| IO Devices changing during operation (partner ports), supported | Yes |
| — Number of IO Devices per tool, max. | 8 |
| - Device replacement without swap medium | Yes |
| — Send cycles | 250 μs, 500 μs, 1 ms, 2 ms, 4 ms |
| — Updating time | 250 μs to 512 ms (depending on the operating mode, see Manual "S7-300 CPU 31xC and CPU 31x, technical Data" for more details) |
| Address area | |
| — Inputs, max. | 8 kbyte |
| — Outputs, max. | 8 kbyte |
| — User data consistency, max. | 1 024 byte |
| PROFINET IO Device | |
| Services | |
| — PG/OP communication | Yes |
| - Routing | Yes |
| ···· U | |

| - S7 communication | Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32 |
|--|---|
| laashranaya mada | |
| — Isochronous mode | No |
| | Yes |
| — PROFlenergy | Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I- Device |
| — Shared device | Yes |
| Number of IO Controllers with shared device, max. | 2 |
| Transfer memory | |
| — Inputs, max. | 1 440 byte; Per IO Controller with shared device |
| — Outputs, max. | 1 440 byte; Per IO Controller with shared device |
| Submodules | |
| — Number, max. | 64 |
| — User data per submodule, max. | 1 024 byte |
| Open IE communication | |
| Number of connections, max. | 16 |
| Local port numbers used at the system end | 0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532, |
| | 65533, 65534, 65535 |
| Keep-alive function, supported | Yes |
| Protocols | |
| PROFIsafe | No |
| Redundancy mode | |
| Media redundancy | |
| - Switchover time on line break, typ. | 200 ms; PROFINET MRP |
| - Number of stations in the ring, max. | 50 |
| Open IE communication | |
| • TCP/IP | Yes; via integrated PROFINET interface and loadable FBs |
| - Number of connections, max. | |
| — Data length for connection type 01H, max. | 1 460 byte |
| — Data length for connection type 11H, max. | 32 768 byte |
| — Bata length for connection ype 111, max. — several passive connections per port, supported | Yes |
| ISO-on-TCP (RFC1006) | Yes; via integrated PROFINET interface and loadable FBs |
| | |
| - Number of connections, max. | 16 22.700 bits |
| — Data length, max. | 32 768 byte |
| • UDP | Yes; via integrated PROFINET interface and loadable FBs |
| — Number of connections, max. | 16 |
| — Data length, max. | 1 472 byte |
| Web server | |
| • supported | Yes |
| User-defined websites | Yes |
| Number of HTTP clients | 5 |
| communication functions / header | |
| PG/OP communication | Yes |
| Data record routing | Yes |
| Global data communication | |
| supported | Yes |
| 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 | |
| supported | Yes |
| • User data per job, max. | 76 byte |
| | 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET |
| • User data per job (of which consistent), max. | as server) |
| User data per job (or which consistent), max. S7 communication | as server) |
| | as server) Yes |
| S7 communication | |
| S7 communication • supported | Yes |

• User data per job, max.

See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)

| | SFCs/FCs of S7 Communication) |
|---|---|
| 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 S7 communication | 16 |
| - reserved for S7 communication | 0 |
| - adjustable for S7 communication, min. | 0 |
| — adjustable for S7 communication, max. | 16 |
| total number of instances, max. | 32 |
| usable for routing | X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. |
| | 14; X2 as PROFINET: 24 max. |
| 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. | 300 |
| Test commissioning functions | |
| Status block | Yes; Up to 2 simultaneously |
| Single step | Yes |
| Number of breakpoints | 4; without continuation |
| 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. | 500 |
| — adjustable | No |
| — of which powerfail-proof | 100; Only the last 100 entries are retained |
| Number of entries readable in RUN, max. | 499 |
| — adjustable | Yes; From 10 to 499 |
| — preset | 10 |
| Service data | |
| can be read out | Yes |
| Interrupts/diagnostics/status information | |
| Alarms | No |
| Diagnostics function | No |
| | |
| Diagnostics indication LED | |

• Status indicator digital input (green)

• Status indicator digital output (green)

Yes

Yes

| Potential separation digital inputs | |
|---|--|
| between the channels and backplane bus | Yes |
| Potential separation digital outputs | |
| between the channels and backplane bus | Yes |
| Isolation | |
| Isolation tested with | 500 V DC |
| Ambient conditions | |
| Ambient temperature during operation | |
| • min. | 0°0 |
| • max. | 60 °C |
| configuration / header | |
| Configuration software | |
| • STEP 7 | Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3 |
| configuration / programming / header | |
| 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 |
| Block encryption | Yes; With S7 block Privacy |
| Dimensions | |
| Width | 120 mm |
| Height | 125 mm |
| Depth | 130 mm |
| Weights | |
| Weight, approx. | 640 g |
| | ~• |

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