6ES7517-3AP00-0AB0

SIEMENS

Data sheet



SIMATIC S7-1500, CPU 1517-3 PN/DP, central processing unit with work memory 2 MB for program and 8 MB for data, 1st interface: PROFINET IRT with 2-port switch, 2nd interface: PROFINET RT, 3rd interface: PROFIBUS, 2 ns bit performance, SIMATIC Memory Card required

| General information | |
|--|--|
| Product type designation | CPU 1517-3 PN/DP |
| HW functional status | FS11 |
| Firmware version | V3.1 |
| FW update possible | Yes |
| Product function | |
| ● I&M data | Yes; I&M0 to I&M3 |
| • Isochronous mode | Yes; Distributed and central; with minimum OB 6x cycle of 250 μs (distributed) and 1 ms (central) |
| SysLog | Yes |
| Engineering with | |
| STEP 7 TIA Portal configurable/integrated from version | V19 (FW V3.1); V13 Update 3 (FW V1.6) or higher |
| Configuration control | |
| via dataset | Yes |
| Display | |
| Screen diagonal [cm] | 6.1 cm |
| Control elements | |
| Number of keys | 6 |
| Mode selector switch | 1 |
| Supply voltage | |
| Rated value (DC) | 24 V |
| permissible range, lower limit (DC) | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V |
| Reverse polarity protection | Yes |
| Mains buffering | |
| Mains/voltage failure stored energy time | 5 ms |
| Repeat rate, min. | 1/s |
| Input current | |
| Current consumption (rated value) | 1.55 A |
| Current consumption, max. | 1.9 A |
| Inrush current, max. | 1.9 A; Rated value |
| l²t | 0.4 A ² ·s |
| Power | |
| Infeed power to the backplane bus | 12 W |
| Power consumption from the backplane bus (balanced) | 30 W |
| Power loss | |
| Power loss, typ. | 24 W |
| Memory | |
| Number of slots for SIMATIC memory card | 1 |
| SIMATIC memory card required | Yes |

| Modernoone | |
|--|---|
| Work memory | O Min de |
| • integrated (for program) | 2 Mbyte |
| integrated (for data) | 8 Mbyte |
| Load memory | |
| Plug-in (SIMATIC Memory Card), max. | 32 Gbyte |
| Backup | |
| maintenance-free | Yes |
| CPU processing times | |
| for bit operations, typ. | 2 ns |
| for word operations, typ. | 3 ns |
| for fixed point arithmetic, typ. | 3 ns |
| for floating point arithmetic, typ. | 12 ns |
| CPU-blocks | |
| Number of elements (total) | 12 000; Blocks (OB, FB, FC, DB) and UDTs |
| DB | |
| Number range | 1 60 999; subdivided into: number range that can be used by the user: 1 |
| | 59 999, and number range of DBs created via SFC 86: 60 000 60 999 |
| • Size, max. | 8 Mbyte; For DBs with absolute addressing, the max. size is 64 KB |
| FB | |
| Number range | 0 65 535 |
| • Size, max. | 1 Mbyte |
| FC | |
| Number range | 0 65 535 |
| • Size, max. | 1 Mbyte |
| OB | |
| • Size, max. | 1 Mbyte |
| Number of free cycle OBs | 100 |
| Number of time alarm OBs | 20 |
| Number of delay alarm OBs | 20 |
| Number of cyclic interrupt OBs | 20; with minimum OB 3x cycle of 100 µs |
| Number of process alarm OBs | 50 |
| Number of DPV1 alarm OBs | 3 |
| Number of isochronous mode OBs | 3 |
| Number of technology synchronous alarm OBs | 2 |
| Number of startup OBs | 100 |
| Number of asynchronous error OBs | 4 |
| Number of synchronous error OBs | 2 |
| Number of diagnostic alarm OBs | 1 |
| Nesting depth | |
| per priority class | 24 |
| Counters, timers and their retentivity | |
| S7 counter | |
| Number | 2 048 |
| Retentivity | |
| — adjustable | Yes |
| IEC counter | |
| Number | Any (only limited by the main memory) |
| Retentivity | , (, |
| — adjustable | Yes |
| S7 times | |
| Number | 2 048 |
| Retentivity | |
| — adjustable | Yes |
| — adjustable IEC timer | 100 |
| | Any (only limited by the main moment) |
| Number Petentivity | Any (only limited by the main memory) |
| Retentivity | Voc |
| — adjustable | Yes |
| Data areas and their retentivity | 70011 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| Retentive data area (incl. timers, counters, flags), max. | 768 kbyte; In total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 700 KB |
| Extended retentive data area (incl. timers, counters, flags), max. | 8 Mbyte; When using PS 6 0W 24/48/60 V DC HF |
| ====================================== | 5 may 15, 111011 doing 1 5 5 511 24/140/00 1 Do 111 |

| Flag | |
|--|---|
| • Size, max. | 16 kbyte |
| Number of clock memories | 8; 8 clock memory bit, grouped into one clock memory byte |
| Data blocks | o, o alone money on, grouped into one distribution ofto |
| Retentivity adjustable | Yes |
| Retentivity adjustable Retentivity preset | No |
| Local data | |
| • per priority class, max. | 64 kbyte; max. 16 KB per block |
| Address area | of hoye, max. To he per brook |
| Number of IO modules | 16 384; max. number of modules / submodules |
| I/O address area | 10 304, max. number of modules / submodules |
| • Inputs | 32 kbyte; All inputs are in the process image |
| Outputs | 32 kbyte; All outputs are in the process image |
| per integrated IO subsystem | 52 kbyte, All outputs are in the process image |
| — Inputs (volume) | 32 khyte: May 32 KR via Y1: may 8 KR via Y2 or Y3 |
| — Inputs (volume) — Outputs (volume) | 32 kbyte; Max. 32 KB via X1; max. 8 KB via X2 or X3 32 kbyte; Max. 32 KB via X1; max. 8 KB via X2 or X3 |
| per CM/CP | OZ KUYLG, IVIAN. OZ KID VIA NI, IIIAN. O KID VIA NZ UI NO |
| • | 8 kbyte |
| — Inputs (volume) | |
| — Outputs (volume) | 8 kbyte |
| Subprocess images • Number of subprocess images may | 32 |
| Number of subprocess images, max. Hardware configuration. | 32 |
| Hardware configuration | C4. A distributed I/O system is about stained and solve the internal in |
| Number of distributed IO systems | 64; A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET or PROFIBUS communication modules, but also by the connection of I/O via AS-i master modules or links (e.g. IE/PB-Link) |
| Number of DP masters | |
| integrated | 1 |
| • Via CM | 8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total |
| Number of IO Controllers | |
| • integrated | 2 |
| • Via CM | 8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total |
| Rack | mocreta in total |
| Modules per rack, max. | 32; CPU + 31 modules |
| Number of lines, max. | 1 |
| PtP CM | |
| Number of PtP CMs | the number of connectable PtP CMs is only limited by the number of available slots |
| Time of day | |
| Clock | |
| • Type | Hardware clock |
| Backup time | 6 wk; At 40 °C ambient temperature, typically |
| Deviation per day, max. | 10 s; Typ.: 2 s |
| Operating hours counter | |
| • Number | 16 |
| Clock synchronization | |
| • supported | Yes |
| • to DP, master | Yes |
| • on DP, device | Yes |
| • in AS, master | Yes |
| • in AS, device | Yes |
| • on Ethernet via NTP | Yes |
| Interfaces | |
| Number of PROFINET interfaces | 2 |
| Number of PROFIBUS interfaces | 1 |
| Interface | |
| | |
| Interface types | Voc. V1 |
| RJ 45 (Ethernet) Number of ports | Yes; X1 |
| Number of ports integrated quiteb | 2 Voa |
| • integrated switch | Yes |
| Protocols | |

| IP protocol PROFINET IO Controller PROFINET IO Device SIMATIC communication Yes | |
|--|---------------------------------|
| PROFINET IO Device Yes | |
| | |
| SIMATIC communication Vec | |
| • SilviA Tie Communication | |
| Open IE communication Yes; Optionally also encrypted | |
| • Web server Yes | |
| Media redundancy Yes | |
| PROFINET IO Controller | |
| Services | |
| — Isochronous mode Yes | |
| — Direct data exchange Yes; Requirement: IRT and isochronous mode | e (MRPD optional) |
| — IRT Yes | |
| — PROFlenergy Yes; per user program | |
| — Prioritized startup Yes; Max. 32 PROFINET devices | |
| Number of connectable IO Devices, max. 512; In total, up to 1 000 distributed I/O device PROFIBUS or PROFINET | es can be connected via AS-i, |
| Of which IO devices with IRT, max.64 | |
| — Number of connectable IO Devices for RT, max. 512 | |
| — of which in line, max. 512 | |
| Number of IO Devices that can be simultaneously activated/deactivated, max. 8; in total across all interfaces | |
| — Number of IO Devices per tool, max. | |
| Updating times The minimum value of the update time also de set for PROFINET IO, on the number of IO dev configured user data | |
| — PROFINET Security Class 1 | |
| Update time for IRT | |
| — for send cycle of 250 μs 250 μs to 4 ms | |
| — for send cycle of 500 μs 500 μs to 8 ms | |
| — for send cycle of 1 ms 1 ms to 16 ms | |
| — for send cycle of 2 ms 2 ms to 32 ms | |
| — for send cycle of 4 ms 4 ms to 64 ms | |
| — With IRT and parameterization of "odd" send cycles Update time = set "odd" send clock (any multip 875 μs) | ole of 125 μs: 375 μs, 625 μs 3 |
| Update time for RT | |
| — for send cycle of 250 μs 250 μs to 128 ms | |
| — for send cycle of 500 μs 500 μs to 256 ms | |
| — for send cycle of 1 ms 1 ms to 512 ms | |
| — for send cycle of 2 ms 2 ms to 512 ms | |
| — for send cycle of 4 ms 4 ms to 512 ms | |
| PROFINET IO Device | |
| Services | |
| — Isochronous mode No | |
| — IRT Yes | |
| — PROFlenergy Yes; per user program | |
| — Shared device Yes | |
| Number of IO Controllers with shared device, max. | |
| — activation/deactivation of I-devices Yes; per user program | |
| Asset management record Yes; per user program | |
| — PROFINET Security Class SNMP Configuration and DCP Read Only | |
| 2. Interface | |
| Interface types | |
| RJ 45 (Ethernet) Yes; X2 | |
| Number of ports | |
| • integrated switch No | |
| Protocols | |
| • IP protocol Yes; IPv4 | |
| PROFINET IO Controller Yes | |
| PROFINET IO Device Yes | |
| | |
| SIMATIC communication Yes | |
| SIMATIC communication Yes Open IE communication Yes; Optionally also encrypted | |

| Services | Media redundancy | No |
|--|---|---------------------------------------|
| Services | · | |
| - Isochronous made - Direct data exchange - Right - PROFilerargy - Priorized startup - Number of connectable IO Devices, max In Start Startup - Number of connectable IO Devices for RT, max In Startup Interface - Number of IO Devices per tool, max In Startup Interface - PROFINET Security Class - PROFINET Security Class - In Interface - In In | | |
| - Direct data exchange - IRT - IRT - PROFilerarry - PROFilerarry - Profilized darup - Number of connectable IO Devices, max Number of connectable IO Devices for RT, max Of which in line, max - Number of IO Devices that can be simultaneously activated/deactivated, max Number of IO Devices per tool, max Number of IO Devices per tool, max Updating times - PROFINET Security Class - PROFINET Security Class - I Update time for RT - In the number of IO Devices, and on the quantity of configured user data - Updating times - PROFINET Security Class - I Update time for RT - In the number of IO Devices, and on the quantity of configured user data - PROFINET IO Device - Services - Isochronous mode - IRT - PROFInerry - PROFInerry - PROFInerry - PROFInerry - PROFInerry - Prontized daruph - Shared device - PROFINET Security Class - Individual of I-devices - Asset management record - PROFINET Security Class - No - No - RT - PROFINET Security Class - No - No - No - PROFINET Security Class - No - No - No - PROFINET Security Class - No - PROFINET Security Class - No | | No |
| | | |
| - PROFilentry - Promitized startup - Number of connectable IO Devices, max Number of connectable IO Devices for RT, max In which in line, max In which in line, max Number of IO Devices that can be simultaneously activated/deachvised, max Number of IO Devices per tool, max Number of IO Devices per tool, max Updaing times - PROFINET Security Class - PROFINET Security Class - In material control of IT I No Configured user data - In material control of IT No Controllers with shared device, max In material device - Number of IO Controllers with shared device, max Asset management record - PROFINET Security Class - Number of IO Controllers with shared device, max Asset management record - PROFINET Security Class - Number of IO Controllers with shared device, max Asset management record - PROFINET Security Class - Number of IO Controllers with shared device, max Asset management record - PROFINET Security Class - Number of IO Controllers with shared device, max PROFINET Security Class - Number of IO Controllers with shared device, max PROFINET Security Class - Number of IO Controllers with shared device, max PROFINET Security Class - Number of IO Controllers with shared device, max PROFINET Security Class - Number of IO Security Class | - | |
| - Prioritized startup - Number of connectable IO Devices, max - Number of connectable IO Devices for RT, max - of which in line, max - of which in line, max - Number of IO Devices that can be simultaneously advantate/descrivated, max - Number of IO Devices that can be simultaneously advantate/descrivated, max - Number of IO Devices per tool, max - Updating times - PROFINET Security Class - PROFINET Security Class - FROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - In ms t | | |
| - Number of connectable IO Devices, max Number of connectable IO Devices for RT, max of which in line, max of which in line, max It will be the connectable IO Devices for RT, max Number of IO Devices that can be simultaneously activated didentivated, max Number of IO Devices per tool, max Number of IO Devices per tool, max Updating times - PROFINET Security Class - PROFINET Security Class - I may be seen and cycle of ms - PROFINET Security Class - I ms to 512 ms - PROFINET IO Device - Services - I acchronous mode - IRT - PROFINET Security Class - Number of IO Controllers with shared device, max Shared device - Number of IO Controllers with shared device, max | 5, | |
| PROFIBUS or PROFINET - Number of connectable IO Devices for RT, max of which in line, max Number of IO Devices that can be simultaneously achivated/deachivated, max Number of IO Devices per tool, max Updating times - Updating times - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - In ms to 512 ms - PROFINET Security Class - Interface startup - Profinitized startup - Asset management record - Asset management record - PROFINET Security Class - Asset management record - PROFINET Security Class - Interface - PROFINET Security Class - Number of ports - Interface types - RS 455 - Number of connections, max PROFIBUS DP master - PROFIBUS DP master - PROFIBUS DP device - Asset management of DP devices - PROFIBUS DP master - PROFIBUS DP device - PROFIBUS DP device - PROFIBUS DP master - PROFIBUS DP | · | |
| of which in line, max Number of 10 Devices that can be simultaneously activated/deactivetex, max Number of 10 Devices per tool, max 8 Number of 10 Devices per tool, max 8 Number of 10 Devices per tool, max 9 PADFINET 10, on the number of 10 devices, and on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per tool on the quantity of configured user data 10 Devices per program 10 Devices program 10 Devices per program 10 Devices program - | | PROFIBUS or PROFINET |
| activated deacharder. max. Number of IO Devices per tool, max. No configured user data No I ms to 512 ms PROFINET IO, on the number of IO devices, and on the quantity of configured user data No I ms to 512 ms PROFINET IO Device Services No No No I ms to 512 ms PROFINET IO Device No No No I ms to 512 ms PROFINET IO Device Services No No No I ms to 512 ms PROFINET IO Device Services No No No I ms to 512 ms PROFINET Security No | | |
| activated/deactivated, max. - Number of IO Devices per tool, max. - Updating times - PROFINET Security Class - PROFINET Security Class - FROFINET Security No - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - FROFINET Security Class - FROFINED P master - FROFINED DP device - SNAIT Communication - FROFINED SP master | | |
| The minimum value of the update time also depends on communication shares for PROFINET IC), on the number of IO devices, and on the quantity of configured user data 1 PROFINET Security Class 1 Update time for RT - for send cycle of 1 ms ROFINET ID Device Services - Isochronous mode - IRT - PROFINET Security Class 1 ms to 512 ms PROFINET OB Device Services - Isochronous mode - IRT - PROFINET No No - PROFINET No - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I devices - Number of IO Controllers with shared device, max activation/deactivation of I devices - ROFINET Security Class - Shared RoFINET Security Class - ROFINET Sec | activated/deactivated, max. | 8; in total across all interfaces |
| set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data - PROFINET Security Class 1 | • | |
| Update time for RT - for send cycle of 1 ms 1 ms to 512 ms PROPINET ID Device Services - Isch To Device Services - Isch To Device - IRT - PROF lenergy - Prioritized startup - Shared device - Number of ID Controllers with shared device, max activation/deactivation of I-devices - Asset management record - PROF INET Security Class - Number of ports - PROFIBUS DP master - PROFIBUS DP master - PROFIBUS DP master - PROFIBUS DP master - PROFIBUS DP Device - SIMATIC communication - Number of DP devices - RS 485 - Number of connections, max max. number of DP devices - Equidistance - Liscotronous mode - activation/deactivation of DP devices - Autonorgoitation - PROFIBUS DP - Autonorgoitation - PROFIBUS DP - Received - Liscotronous mode - activation/deactivation of DP devices - Autonorgoitation - Yes PLOFIGURE TO DEVICE - PROFIBUS DP - Autonorgoitation - Yes - Liscotronous mode - activation/deactivation of DP devices - Autonorgoitation - Yes - Autonorgoitation - Yes - RS 485 - Transmission rate, max Transmission rate, max Transmission rate, max Number of connections, max Number of connections, max Number of connections - Number of connections, max Yes - Transmission rate, max Transmission rate, max Number of connections, max Solve integrated interfaces of the CPU and connected CPs / CMs | — Updating times | |
| for send cycle of 1 ms PROFINET ID Device Services Isochronous mode IRT PROF lenergy Prioritized startup Prioritized startup Prioritized startup Prioritized startup Prioritized startup Shared device Number of IO Controllers with shared device, max activation/deactivation of I-devices Asset management record Asset management record Asset management record PROFINET Security Class SNMP Configuration and DCP Read Only 3. Interface Interface types RS 485 RS 485 Number of ports PROFIBUS DP master Number of DP devices Services Equidistance activation/deactivation of DP devices Isochronous mode activation/deactivation of DP devices Interface types RJ 45 (Ethernet) 100 Mbps Autocrossing Industrial Ethernet status LED Yes RS 485 Transmission rate, max PROFISate Number of connections, max Interface types Industrial Ethernet status LED Yes RS 485 Transmission rate, max PROFISate Number of connections, max Number of c | — PROFINET Security Class | |
| PROFINET IO Device Services - Isochronous mode - IRT - PROFlenergy - Prioritized startup - Promitized startup - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record - PROFINET Security Class - SNMP Configuration and DCP Read Only 3. Interface Interface types - RS 485 - Number of ports - Number of ports - Number of ports - Number of connections, max Max. number of DP devices - Equidistance - Isochronous mode - activation/deactivation of DP devices - Services - Iterface types - California - Services - Equidistance - Isochronous mode - activation/deactivation of DP devices - Isochronous mode - activation/deactivation of DP devices - Interface types - Autonegoliation - Autocrossing - Autonegoliation - Autocrossing - Yes - Transmission rate, max Transmission rate, max Number of connections, max Number of connections, max Autonegoliation - Autocrossing - Transmission rate, max Transmission rate, max Number of connections, max Number of connections, max Number of connections, max Number of connections, max Yes - Industrial Ethemet status LED - Yes - Transmission rate, max Transmission rate, max Number of connections, max Number of connected CPs / CMs | Update time for RT | |
| Services - Isochronous mode - IRT - PROFIenergy - Prioritized startup - Proficitized startup - No - Shared device - Number of IO Controllers with shared device, max activation/deactivation of - Levices - Asset management record - PROFINET Security Class - Asset management record - PROFINET Security Class - RS 485 - Number of ports - RS 485 - Number of ports - PROFIBUS DP master - PROFIBUS DP master - PROFIBUS DP device - SIMATIC communication - PROFIBUS DP master - Number of connections, max Max. number of DP devices - Equidistance - Isochronous mode - activation/deactivation of DP devices - Lequidistance - Isochronous mode - activation/deactivation of DP devices - activation/deactivation of DP devices - Industrial Ethernet status LED - RS 485 - Transmission rate, max Transmission rate, max Number of connections, max Number of connections - Number of connections, max Number of connections, max Altocrossing - Yes - Industrial Ethernet status LED - RS 485 - Transmission rate, max Number of connections, max Number | — for send cycle of 1 ms | 1 ms to 512 ms |
| Services - Isochronous mode - IRT - PROFIenergy - Prioritized startup - Prioritized startup - Prioritized startup - Shared device - Number of IO Controllers with shared device, max activation/deactivation of Ledvices - Asset management record - PROFINET Security Class - Asset management record - PROFINET Security Class - RS 485 - Number of ports - PROFIBUS DP master - PROFIBUS DP master - PROFIBUS DP device - SIMATIC communication - PROFIBUS DP device - SIMATIC communication - PROFIEUS DP master - Number of DP devices - Equidistance - Isochronous mode - Lequidistance - Isochronous mode - activation/deactivation of DP devices - California - Autocrossing - Autocrossing - Autocrossing - Industrial Ethernet status LED - Transmission rate, max Italiance (PROFISIS DP) - PROFISIS DP - PROFISIS DP - PROFISIS DP - PROFISIS DP - RS 485 - Transmission rate, max Yes - PROFISIS DP - PROFISIS DP - PROFISIS DP - RS 485 - Transmission rate, max Italiance - PROFISIS DP - | · · · · · · · · · · · · · · · · · · · | |
| - IRT PROFlenergy Yes; per user program PROFlenergy Yes; per user program Profitized startup No Shared device Yes Number of IO Controllers with shared device, max. Asset management record Yes; per user program PROFINET Security Class SMMP Configuration and DCP Read Only SI. Interface Wes PROFIBUS DP master Yes; Provided No PROFIBUS DP master Yes PROFIBUS DP device No SIMATIC communication Yes PROFIBUS DP master Aurumenter of DP devices PROFIBUS DP master PROFIBUS DP master Aurumenter of DP devices PROFIBUS DP master PROFIBUS DP master PROFIBUS DP master Aurumenter of DP devices PROFIBUS DP master PROFIBUS DP maste | Services | |
| - IRT PROFlenergy Yes; per user program PROFlenergy Yes; per user program Profitized startup No Shared device Yes Number of IO Controllers with shared device, max. Asset management record Yes; per user program PROFINET Security Class SMMP Configuration and DCP Read Only SI. Interface Wes PROFIBUS DP master Yes; Provided No PROFIBUS DP master Yes PROFIBUS DP device No SIMATIC communication Yes PROFIBUS DP master Aurumenter of DP devices PROFIBUS DP master PROFIBUS DP master Aurumenter of DP devices PROFIBUS DP master PROFIBUS DP master PROFIBUS DP master Aurumenter of DP devices PROFIBUS DP master PROFIBUS DP maste | | No |
| PROFIlenergy Prioritized startup No Shared device Number of IO Controllers with shared device, max activation/deactivation of I-devices PROFINET Security Class SMMP Configuration and DCP Read Only SINDER OF SECURITY | | |
| - Prioritized startup - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record - PROFINET Security Class 3. Interface Interface types - RX 485 - Number of ports - PROFIBUS DP master - Number of connections, max Max. number of DP devices - Equidistance - Equidistance - Equidistance - Lequidistance - Lequ | | |
| - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record - PROFINET Security Class 3. Interface Interface types - RS 485 - PROFIBUS DP master - PROFIBUS DP master - PROFIBUS DP device - SIMATIC communication PROFIBUS DP master - Number of connections, max Max. number of DP devices - Equidistance - Equidistance - Equidistance - Services - Equidistance - Services - Equidistance - Services - Isochronous mode - activation/deactivation of DP devices - Autocrossing - Number of DP devices - Autocrossing - Autocrossing - Interface types - Interface types - Interface types - Autocrossing - Transmission rate, max Yes - Transmission rate, max Number of connections - Number of connections | | |
| - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record - PROFINET Security Class SNMP Configuration and DCP Read Only 3. Interface Interface types • RS 485 • Number of ports 1 Protocols • PROFIBUS DP master • PROFIBUS DP device • SIMATIC communication PROFIBUS DP master • Number of connections, max. • Max. number of DP devices - Equidistance - Isochronous mode - activation/deactivation of DP devices RJ 45 (Ethernet) • 100 Mbps • Autoropsing • Industrial Ethernet status LED RS 485 • Transmission rate, max. • Transmission rate, max. • Number of connections | · | |
| - activation/deactivation of I-devices - Asset management record - PROFINET Security Class 3. Interface Interface types • RS 485 • Number of ports • PROFIBUS DP master • PROFIBUS DP device • SIMATIC communication PROFIBUS DP master • Number of connections, max. • max. number of DP devices - Equidistance - Equidistance - Equidistance - Scortons mode - activation/deactivation of DP devices RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Yes RS 485 • Interface types RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Yes RS 485 • Transmission rate, max. 12 Mbit/s PROFISES ROFIGURED | | |
| - Asset management record - Yes; per user program - PROFINET Security Class SNMP Configuration and DCP Read Only 3. Interface types - RS 485 Yes; X3 - Number of ports 1 Protocols - PROFIBUS DP master Yes - PROFIBUS DP device No - SIMATIC communication Yes PROFIBUS DP master - Number of connections, max. 48; for the integrated PROFIBUS DP interface - Number of DP devices 125; In total, up to 1 000 distributed I/O devices can be connected via AS-I, PROFIBUS or PROFINET Services - Equidistance Yes - Isochronous mode Yes - activation/deactivation of DP devices Yes Interface types 1. J 45 (Ethermet) - 100 Mbps Yes - Autonegotiation Yes - Autocrossing Yes - Interface types - Interface types - Autocrossing Yes - Interface types - Autocrossing Yes - Interface types - Interface types - Autocrossing Yes - Autocrossing Yes - Interface types - Interface types - Interface types - Autocrossing Yes - Autocrossing Yes - Autocrossing Yes - Interface types - Transmission rate, max. 12 Mbit/s - Transmission rate, max. 32 Mbit/s - PROFIsafe - No - Number of connections - Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | | |
| - PROFINET Security Class SNMP Configuration and DCP Read Only Interface types RS 485 Number of ports 1 Protocols PROFIBUS DP master PROFIBUS DP device SIMATIC communication PROFIBUS DP master Number of connections, max. A8; for the integrated PROFIBUS DP interface max. number of DP devices PROFIBUS DP device Services Equidistance Services Equidistance Services Yes Services 125; In total, up to 1 000 distributed I/O devices can be connected via AS-I, PROFIBUS or PROFINET Services Yes Services Factivation/deactivation of DP devices Yes Authoroposition Authorogotiation Authorossing Authorossing Services RJ 45 (Ethernet) 100 Mbps Yes Authorossing Yes Authorossing Yes Industrial Ethernet status LED Yes RS 485 Transmission rate, max. 12 Mbit/s Protocols PROFISafe No Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | | |
| Interface types RS 485 Number of ports Protocols PROFIBUS DP master PROFIBUS DP device SIMATIC communication PROFIBUS DP master Number of connections, max. Reference PROFIBUS DP device No SIMATIC communication PROFIBUS DP master Number of connections, max. Reference PROFIBUS DP master Number of DP devices RS 48; for the integrated PROFIBUS DP interface 125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Services RUMBER OF THE OFFICE OFFICE OF THE OFFICE OFF | - | |
| Interface types RS 485 RS 485 Number of ports Protocols PROFIBUS DP master PROFIBUS DP device No SIMATIC communication PROFIBUS DP master Number of connections, max. A8; for the integrated PROFIBUS DP interface PROFIBUS DP master Number of DP devices PROFIBUS OP master Number of DP devices PROFIBUS OP master Number of DP devices PROFIBUS OP PROFINET Services PROFIBUS OP PROFINET Services PROFIBUS OP PROFINET Services PROFIBUS OF PROFINET Services Proces Pres Pres Pres Pres Pres Pres Profice types Protocols Pres PROFISafe No Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | | SIMIP Configuration and DCP Read Only |
| RS 485 Number of ports Protocols PROFIBUS DP master PROFIBUS DP device No SIMATIC communication PROFIBUS DP master Number of connections, max. As, for the integrated PROFIBUS DP interface PROFIBUS DP devices Services PROFIBUS or PROFINET Services PROFIBUS or PROFIBUS DP interface PROFIBUS | | |
| Number of ports Protocols PROFIBUS DP master PROFIBUS DP device SIMATIC communication PROFIBUS DP master Number of connections, max. As for the integrated PROFIBUS DP interface max. number of DP devices PROFIBUS or PROFINET Services - Equidistance - Isochronous mode - activation/deactivation of DP devices Ptes Autonegotiation Autocrossing Industrial Ethernet status LED Protocols PROFISafe Number of connections, max. 1 Moly Number of connections, max. 1 Moly Number of connections, max. 1 Moly Number of connections, max. 3 20; via integrated interfaces of the CPU and connected CPs / CMs | | Vac. V2 |
| Protocols PROFIBUS DP master PROFIBUS DP device SIMATIC communication PROFIBUS DP master Number of connections, max. Talentaria Ethernet status LED Protocols PROFIBUS DP master Aves PROFIBUS DP master Number of connections, max. As; for the integrated PROFIBUS DP interface Ats; for the integrat | | |
| PROFIBUS DP master PROFIBUS DP device No SIMATIC communication PROFIBUS DP master Number of connections, max. Number of connections, max. Services PROFIBUS or PROFINET Yes Proside types RJ 45 (Ethernet) PROFIBUS OF PROFINET Yes Profice types RJ 45 (Ethernet) PROFIBUS DP interface No No Number of connections, max. Supplied the fraces of the CPU and connected CPs / CMs | | |
| PROFIBUS DP device SIMATIC communication Yes PROFIBUS DP master Number of connections, max. A8; for the integrated PROFIBUS DP interface Task, number of DP devices Task, in total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Services Equidistance Yes Isochronous mode Yes Activation/deactivation of DP devices RJ 45 (Ethernet) 100 Mbps Yes Autonegotiation Yes Autorossing Industrial Ethernet status LED Yes RS 485 Transmission rate, max. Protocols PROFIsafe No Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | | V |
| SIMATIC communication PROFIBUS DP master Number of connections, max. max. number of DP devices PROFIBUS or PROFIBUS DP interface 125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Services Equidistance Services PEquidistance Isochronous mode Activation/deactivation of DP devices Pes Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autocrossing Industrial Ethernet status LED Prostase Profisafe No Number of connections Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | | |
| PROFIBUS DP master Number of connections, max. Max. number of DP devices PROFIBUS or PROFIBUS DP interface 125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Services Equidistance Services Pactivation/deactivation of DP devices Yes activation/deactivation of DP devices Yes Interface types RJ 45 (Ethernet) Autorogosing Autorogosing Industrial Ethernet status LED Yes Industrial Ethernet status LED Yes State Transmission rate, max. Yes Web No Number of connections Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | | |
| Number of connections, max. Max. number of DP devices Iterfaces - Equidistance - activation/deactivation of DP devices RJ 45 (Ethernet) Autocrossing - Industrial Ethernet status LED RS 485 Transmission rate, max. PROFISUS or PROFIBUS or PROFINET 48; for the integrated PROFIBUS DP interface 125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes - Loudistance - Yes - Activation/deactivation of DP devices Yes No Number of connections, max. 48; for the integrated PROFIBUS DP interface 125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFIBUS DP interface Yes - Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interface Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interface Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices Yes - Loudistributed I/O devices - Loudistributed | | Yes |
| max. number of DP devices | | 40 (|
| PROFIBUS of PROFINET Services - Equidistance | | |
| Equidistance Yes Isochronous mode Yes activation/deactivation of DP devices Yes Interface types RJ 45 (Ethernet) | max. number of DP devices | |
| Isochronous mode activation/deactivation of DP devices Interface types RJ 45 (Ethernet) Interface types RJ 45 (Ethernet) Industrial Ethernet status LED RS 485 Transmission rate, max. Protocols PROFIsafe No Number of connections Number of connections, max. Number of connections, max. Protocols Number of connections, max. Number of connections, max. Yes Yes Yes Yes Yes Yes Yes Ye | Services | |
| | — Equidistance | Yes |
| Interface types RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Autocrossing • Industrial Ethernet status LED RS 485 • Transmission rate, max. Protocols PROFIsafe No Number of connections • Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | — Isochronous mode | Yes |
| RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Autocrossing • Industrial Ethernet status LED RS 485 • Transmission rate, max. Protocols PROFIsafe No Number of connections • Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | activation/deactivation of DP devices | Yes |
| RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Autocrossing • Industrial Ethernet status LED RS 485 • Transmission rate, max. Protocols PROFIsafe No Number of connections • Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | Interface types | |
| 100 Mbps Autonegotiation Autocrossing Industrial Ethernet status LED RS 485 Transmission rate, max. Mumber of connections Number of connections, max. 12 Mbit/s | | |
| Autonegotiation Autocrossing Industrial Ethernet status LED RS 485 Transmission rate, max. Mumber of connections Number of connections, max. Yes Yes Yes Tes No Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | , | Yes |
| Autocrossing Industrial Ethernet status LED Yes RS 485 Transmission rate, max. Mbit/s Protocols PROFIsafe Number of connections Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | · | |
| ● Industrial Ethernet status LED RS 485 ● Transmission rate, max. 12 Mbit/s Protocols PROFIsafe No Number of connections ● Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | - | |
| RS 485 • Transmission rate, max. 12 Mbit/s Protocols PROFIsafe No Number of connections • Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | | |
| ● Transmission rate, max. Protocols PROFIsafe No Number of connections ● Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | | 100 |
| PROFIsafe No Number of connections Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | | 12 Mhit/s |
| PROFIsafe No Number of connections Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | · | 12 IVIDIUS |
| Number of connections • Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | | No |
| Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs | | INU |
| | | |
| Number of connections reserved for ES/HMI/web | | |
| | Number of connections reserved for ES/HMI/web | 10 |
| Number of connections via integrated interfaces 288 | Number of connections via integrated interfaces | 288 |

| Number of S7 routing paths | 64; in total, only 16 S7-Routing connections are supported via PROFIBUS |
|---|--|
| Redundancy mode | |
| H-Sync forwarding | Yes |
| Media redundancy | |
| — Media redundancy | only via 1st interface (X1) |
| — MRP | Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; |
| | MRP Client |
| MRP interconnection, supported | Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 |
| — MRPD | Yes; Requirement: IRT |
| Switchover time on line break, typ. | 200 ms; For MRP, bumpless for MRPD |
| — Number of stations in the ring, max. | 50 |
| SIMATIC communication | |
| PG/OP communication | Yes; encryption with TLS V1.3 pre-selected |
| S7 routing | Yes |
| Data record routing | Yes |
| S7 communication, as server | Yes |
| S7 communication, as client | Yes |
| User data per job, max. | See online help (S7 communication, user data size) |
| Open IE communication | |
| • TCP/IP | Yes |
| — Data length, max. | 64 kbyte |
| — several passive connections per port, supported | Yes |
| • ISO-on-TCP (RFC1006) | Yes |
| — Data length, max. | 64 kbyte |
| • UDP | Yes |
| — Data length, max. | 2 kbyte; 1 472 bytes for UDP broadcast |
| — UDP multicast | Yes; 128 multicast circuits (of which max. 5 via X1) |
| • DHCP | Yes |
| • DNS | Yes |
| • SNMP | Yes |
| • DCP | Yes |
| • LLDP | Yes |
| Encryption | Yes; Optional |
| Web server | |
| • HTTP | Yes; Standard and user pages |
| • HTTPS | Yes; Standard and user pages |
| • web API | |
| — Number of sessions, max. | 200 |
| — number of simultaneous HTTP calls, max. | 4 |
| — HTTP request body, max. | 131 072 byte |
| OPC UA | |
| Runtime license required | |
| | Yes; "Large" license required |
| OPC UA Client | Yes; "Large" license required Yes; Data Access (registered Read/Write), Method Call |
| OPC UA Client — Application authentication | |
| | Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, |
| Application authentication Security policies | Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 |
| Application authentication Security policies User authentication | Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password |
| — Application authentication — Security policies — User authentication — Number of connections, max. | Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 40 |
| — Application authentication— Security policies— User authentication | Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password |
| — Application authentication — Security policies — User authentication — Number of connections, max. — Number of nodes of the client interfaces, | Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 40 |
| — Application authentication — Security policies — User authentication — Number of connections, max. — Number of nodes of the client interfaces, recommended max. — Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/OPC_I | Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 40 5 000 |
| — Application authentication — Security policies — User authentication — Number of connections, max. — Number of nodes of the client interfaces, recommended max. — Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/OPC_I max. — Number of elements for one call of | Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 40 5 000 |
| — Application authentication — Security policies — User authentication — Number of connections, max. — Number of nodes of the client interfaces, recommended max. — Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/OPC_I max. — Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max. — Number of elements for one call of | Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 40 5 000 300 |
| — Application authentication — Security policies — User authentication — Number of connections, max. — Number of nodes of the client interfaces, recommended max. — Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/OPC_I max. — Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max. — Number of elements for one call of OPC_UA_MethodGetHandleList, max. — Number of simultaneous calls of the client instructions for session management, per connection, | Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 40 5 000 300 20 |
| Application authentication Security policies User authentication Number of connections, max. Number of nodes of the client interfaces, recommended max. Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/OPC_I max. Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max. Number of elements for one call of OPC_UA_MethodGetHandleList, max. Number of simultaneous calls of the client instructions for session management, per connection, max. Number of simultaneous calls of the client | Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 40 5 000 300 20 100 |

| OPC_UA_MethodCall, max. | |
|--|--|
| Number of inputs/outputs when calling | 20 |
| OPC_UA_MethodCall, max. | |
| OPC UA Server | Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space |
| Application authentication | Yes |
| — Security policies | available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss |
| User authentication | "anonymous" or by user name & password |
| — GDS support (certificate management) | Yes |
| Number of sessions, max. | 64 |
| Number of accessible variables, max. | 200 000 |
| Number of registerable nodes, max. | 50 000 |
| Number of subscriptions per session, max. | 50 |
| — Sampling interval, min. | 10 ms |
| — Publishing interval, min. | 10 ms |
| Number of server methods, max. | 100 |
| Number of inputs/outputs per server method, max. | 20 |
| Number of monitored items, recommended max. | 10 000; for 1 s sampling interval and 1 s send interval |
| Number of server interfaces, max. | 10 of each "Server interfaces" / "Companion specification" type and 20 of the type "Reference namespace" |
| Number of nodes for user-defined server interfaces, max. | 30 000 |
| Alarms and Conditions | Yes |
| Number of program alarms | 400 |
| Number of alarms for system diagnostics | 200 |
| Further protocols | |
| • MODBUS | Yes; MODBUS TCP |
| Isochronous mode | |
| Equidistance | Yes |
| S7 message functions | |
| Number of login stations for message functions, max. | 64 |
| number of subscriptions, max. | 750 |
| number of tags/attributes for subscriptions, max. | 20 000 |
| Program alarms | Yes |
| Number of configurable program messages, max. | 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH |
| Number of loadable program messages in RUN, max. | 10 000 |
| Number of simultaneously active program alarms | |
| · · · · · | |
| Number of program alarms | 2 000 |
| , | 2 000 1 000 |
| Number of program alarms | |
| Number of program alarmsNumber of alarms for system diagnostics | 1 000 |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects | 1 000 |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions | 1 000 480 |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control Status/control variable Variables Number of variables, max. | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control Variables Number of variables, max. — of which status variables, max. — of which control variables, max. | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing Forcing | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing, variables | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing Forcing Forcing, variables Number of variables, max. | 1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer | Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 |
| Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present | Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes |

| Traces | |
|--|--|
| Number of configurable Traces | 8 |
| Memory size per trace, max. | 512 kbyte |
| Interrupts/diagnostics/status information | 0.2.1.5,1.0 |
| Diagnostics indication LED | |
| RUN/STOP LED | Yes |
| • ERROR LED | Yes |
| • MAINT LED | Yes |
| Connection display LINK TX/RX | Yes |
| Supported technology objects | |
| Motion Control | Yes; Note: The number of technology objects affects the cycle time of the PLC |
| | program; selection guide via the TIA Selection Tool |
| Number of available Motion Control resources for technology objects | 10 240 |
| Required Motion Control resources | |
| per speed-controlled axis | 40 |
| — per positioning axis | 80 |
| — per synchronous axis | 160 |
| — per external encoder | 80 |
| — per output cam | 20 |
| — per cam track | 160 |
| — per probe | 40 |
| Positioning axis | |
| Number of positioning axes at motion control cycle of 4 ms (typical value) | 70 |
| Number of positioning axes at motion control cycle of 8 ms (typical value) | 128 |
| Controller | |
| PID_Compact | Yes; Universal PID controller with integrated optimization |
| PID_3Step | Yes; PID controller with integrated optimization for valves |
| PID-Temp | Yes; PID controller with integrated optimization for temperature |
| Counting and measuring | |
| High-speed counter | Yes |
| Standards, approvals, certificates | |
| Ecological footprint | V |
| environmental product declaration | Yes |
| Global warming potential | 570 1 |
| — global warming potential, (total) [CO2 eq] | 570 kg |
| — global warming potential, (during production) [CO2 eq] | 96.9 kg |
| — global warming potential, (during operation) [CO2 eq] | 483 kg |
| — global warming potential, (after end of life cycle)[CO2 eq] | -9.97 kg |
| Ambient conditions | |
| Ambient temperature during operation | |
| horizontal installation, min. | 0 °C |
| horizontal installation, max. | 60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off |
| vertical installation, min. | 0 °C |
| vertical installation, max. | 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off |
| Ambient temperature during storage/transportation | |
| • min. | -40 °C |
| • max. | 70 °C |
| Altitude during operation relating to sea level | |
| Installation altitude above sea level, max. | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual |
| configuration / header | |
| configuration / programming / header | |
| Programming language | |
| — LAD | Yes |
| — FBD | Yes |
| — STL | Yes |
| | |

| — SCL | Yes |
|---|-------------------------------|
| — CFC | Yes |
| — GRAPH | Yes |
| Know-how protection | |
| User program protection/password protection | Yes |
| Copy protection | Yes |
| Block protection | Yes |
| Access protection | |
| protection of confidential configuration data | Yes |
| Password for display | Yes |
| Protection level: Write protection | Yes |
| Protection level: Read/write protection | Yes |
| Protection level: Write protection for Failsafe | No |
| Protection level: Complete protection | Yes |
| User administration | Yes; device-wide |
| programming / cycle time monitoring / header | |
| lower limit | adjustable minimum cycle time |
| • upper limit | adjustable maximum cycle time |
| Dimensions | |
| Width | 175 mm |
| Height | 147 mm |
| Depth | 129 mm |
| Weights | |
| Weight, approx. | 1 929 g |
| | |

last modified:

10/9/2024