

Siemens  
EcoTech



SIMATIC S7-1500T, CPU 1516T-3 PN, central processing unit with 3 MB work memory for program and 25 MB for data, 1st interface: PROFINET IRT with 2-port switch, 2nd interface: PROFINET IRT with 2-port switch, 3rd interface: PROFINET basic services 1.2 ns bit performance, SIMATIC Memory Card required



| General information  |   |
|--|---|
| Product type designation   | CPU 1516T-3 PN  |
| HW functional status   | FS01  |
| Firmware version   | V4.0  |
| <ul style="list-style-type: none"> <li>FW update possible</li> </ul>                                     | Yes   |
| Product function   |   |
| <ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>   | Yes; I&M0 to I&M3   |
| <ul style="list-style-type: none"> <li>Isochronous mode</li> </ul>                                       | Yes; Distributed and central; with minimum OB 6x cycle of 250 µs (distributed) and 1 ms (central) |
| <ul style="list-style-type: none"> <li>SysLog</li> </ul>   | Yes   |
| Engineering with   |   |
| <ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul> | V20 (FW V4.0)   |
| Configuration control  |   |
| via dataset  | Yes   |
| Display  |   |
| Screen diagonal [cm]   | 6.1 cm  |
| Control elements   |   |
| Number of keys   | 8   |
| Mode buttons   | 2   |
| 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  |   |
| <ul style="list-style-type: none"> <li>Mains/voltage failure stored energy time</li> </ul>               | 5 ms  |
| <ul style="list-style-type: none"> <li>Repeat rate, min.</li> </ul>                                      | 1/s   |
| Input current  |   |
| Current consumption (rated value)  | 1.07 A  |
| Current consumption, max.  | 1.5 A   |
| Inrush current, max.   | 1.5 A; Rated value  |
| $I^2t$   | 0.4 A <sup>2</sup> ·s   |
| Power  |   |
| Infeed power to the backplane bus  | 12 W  |
| Power consumption from the backplane bus (balanced)  | 30 W  |
| Power loss   |   |
| Power loss, typ.   | 13.6 W  |

| Memory                                       |   |
|--|---|
| Number of slots for SIMATIC memory card      | 1   |
| SIMATIC memory card required                 | Yes   |
| Work memory                                  |   |
| • integrated (for program)                   | 3 Mbyte   |
| • integrated (for data)                      | 25 Mbyte  |
| Load memory                                  |   |
| • Plug-in (SIMATIC Memory Card), max.        | 32 Gbyte  |
| Backup                                       |   |
| • maintenance-free                           | Yes   |
| CPU processing times                         |   |
| for bit operations, typ.                     | 1.2 ns  |
| for word operations, typ.                    | 2.6 ns  |
| for fixed point arithmetic, typ.             | 2.6 ns  |
| for floating point arithmetic, typ.          | 7.6 ns  |
| CPU-blocks                                   |   |
| Number of elements (total)                   | 10 000; 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.                                 | 16 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 250 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   |
| IEC timer                                    |   |
| • Number                                     | Any (only limited by the main memory)   |
| Retentivity                                  |   |
| — adjustable                                 | Yes   |
| Data areas and their retentivity             |   |

|  |   |
|--|---|
| Retentive data area (incl. timers, counters, flags), max.  | 1 Mbyte; in total; available retentive memory for bit memories, timers, counters, DBs, and technology data: 1 MB  |
| Extended retentive data area (incl. timers, counters, flags), max.   | 25 Mbyte; When using PS 6 0W 24/48/60 V DC HF   |
| <b>Flag</b>  |   |
| <ul style="list-style-type: none"> <li>• Size, max.</li> <li>• Number of clock memories</li> </ul>   | 16 kbyte<br>8; 8 clock memory bit, grouped into one clock memory byte   |
| <b>Data blocks</b>   |   |
| <ul style="list-style-type: none"> <li>• Retentivity adjustable</li> <li>• Retentivity preset</li> </ul>   | Yes<br>No   |
| <b>Local data</b>  |   |
| <ul style="list-style-type: none"> <li>• per priority class, max.</li> </ul>   | 64 kbyte; max. 16 KB per block  |
| <b>Address area</b>  |   |
| Number of IO modules   | 8 192; max. number of modules / submodules  |
| <b>I/O address area</b>  |   |
| <ul style="list-style-type: none"> <li>• Inputs</li> <li>• Outputs</li> </ul>  | 32 kbyte; All inputs are in the process image<br>32 kbyte; All outputs are in the process image   |
| <b>per integrated IO subsystem</b>   |   |
| — Inputs (volume)  | 32 kbyte  |
| — Outputs (volume)   | 32 kbyte  |
| <b>per CM/CP</b>   |   |
| — Inputs (volume)  | 8 kbyte   |
| — Outputs (volume)   | 8 kbyte   |
| <b>Subprocess images</b>   |   |
| <ul style="list-style-type: none"> <li>• Number of subprocess images, max.</li> </ul>  | 32  |
| <b>Hardware configuration</b>  |   |
| 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) |
| <b>Number of DP masters</b>  |   |
| <ul style="list-style-type: none"> <li>• Via CM</li> </ul>   | 8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total   |
| <b>Number of IO Controllers</b>  |   |
| <ul style="list-style-type: none"> <li>• integrated</li> <li>• Via CM</li> </ul>   | 2<br>8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total  |
| <b>Rack</b>  |   |
| <ul style="list-style-type: none"> <li>• Modules per rack, max.</li> <li>• Number of lines, max.</li> </ul>  | 32; CPU + 31 modules<br>1   |
| <b>PtP CM</b>  |   |
| <ul style="list-style-type: none"> <li>• Number of PtP CMs</li> </ul>  | the number of connectable PtP CMs is only limited by the number of available slots  |
| <b>Time of day</b>   |   |
| <b>Clock</b>   |   |
| <ul style="list-style-type: none"> <li>• Type</li> <li>• Backup time</li> <li>• Deviation per day, max.</li> </ul>   | Hardware clock<br>6 wk; At 40 °C ambient temperature, typically<br>10 s; Typ.: 2 s  |
| <b>Operating hours counter</b>   |   |
| <ul style="list-style-type: none"> <li>• Number</li> </ul>   | 16  |
| <b>Clock synchronization</b>   |   |
| <ul style="list-style-type: none"> <li>• supported</li> <li>• to DP, master</li> <li>• on DP, device</li> <li>• in AS, master</li> <li>• in AS, device</li> <li>• on Ethernet via NTP</li> </ul> | Yes<br>Yes; via PROFIBUS CM / CP<br>Yes; via PROFIBUS CM / CP<br>Yes<br>Yes<br>Yes  |
| <b>Interfaces</b>  |   |
| Number of PROFINET interfaces  | 3   |
| Number of PROFIBUS interfaces  | 0   |
| <b>1. Interface</b>  |   |
| <b>Interface types</b>   |   |
| <ul style="list-style-type: none"> <li>• RJ 45 (Ethernet)</li> <li>• Number of ports</li> </ul>  | Yes; X1<br>2  |

|   |  |
|---|--|
| • integrated switch   | Yes  |
| <b>Protocols</b>  |  |
| • IP protocol   | Yes; IPv4  |
| • PROFINET IO Controller  | Yes  |
| • PROFINET IO Device  | Yes  |
| • SIMATIC communication   | Yes  |
| • Open IE communication   | Yes; Optionally also encrypted   |
| • Web server  | Yes  |
| • Media redundancy  | Yes  |
| <b>PROFINET IO Controller</b>   |  |
| <b>Services</b>   |  |
| — Isochronous mode  | Yes  |
| — Direct data exchange  | Yes; Requirement: IRT and isochronous mode (MRPD optional)   |
| — IRT   | Yes  |
| — PROFINergy  | Yes; per user program  |
| — Prioritized startup   | Yes; Max. 32 PROFINET devices  |
| — Number of connectable IO Devices, max.                                      | 512; in total, up to 1024 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET  |
| — Of which IO devices with IRT, max.  | 64; with DFP: 256 IO devices in 8 DFP groups   |
| — 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.   | 8  |
| — Updating times  | The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data |
| — PROFINET Security Class   | 1  |
| <b>Update time for IRT</b>  |  |
| — 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 multiple of 125 µs: 375 µs, 625 µs ... 3 875 µs)   |
| <b>Update time for RT</b>   |  |
| — 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   |
| <b>PROFINET IO Device</b>   |  |
| <b>Services</b>   |  |
| — Isochronous mode  | No   |
| — IRT   | Yes  |
| — PROFINergy  | Yes; per user program  |
| — Shared device   | Yes  |
| — Number of IO Controllers with shared device, max.                           | 4  |
| — 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   |
| <b>2. Interface</b>   |  |
| <b>Interface types</b>  |  |
| • RJ 45 (Ethernet)  | Yes; X2  |
| • Number of ports   | 2  |
| • integrated switch   | Yes  |
| <b>Protocols</b>  |  |
| • IP protocol   | Yes; IPv4  |
| • PROFINET IO Controller  | Yes  |
| • PROFINET IO Device  | Yes  |
| • SIMATIC communication   | Yes  |

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|---|--|
| <ul style="list-style-type: none"> <li>• Open IE communication</li> </ul>     | Yes; Optionally also encrypted   |
| <ul style="list-style-type: none"> <li>• Web server</li> </ul>                | Yes  |
| <ul style="list-style-type: none"> <li>• Media redundancy</li> </ul>          | Yes  |
| <b>PROFINET IO Controller</b>   |  |
| <b>Services</b>   |  |
| — Isochronous mode  | Yes  |
| — Direct data exchange  | Yes; Requirement: IRT and isochronous mode (MRPD optional)   |
| — IRT   | Yes  |
| — PROFlenergy   | Yes; per user program  |
| — Prioritized startup   | No   |
| — Number of connectable IO Devices, max.                                      | 512; in total, up to 1024 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET  |
| — Of which IO devices with IRT, max.  | 64; with DFP: 256 IO devices in 8 DFP groups   |
| — 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.   | 8  |
| — Updating times  | The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data |
| — PROFINET Security Class   | 1  |
| <b>Update time for IRT</b>  |  |
| — 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 multiple of 125 µs: 375 µs, 625 µs ... 3 875 µs)   |
| <b>Update time for RT</b>   |  |
| — 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   |
| <b>PROFINET IO Device</b>   |  |
| <b>Services</b>   |  |
| — Isochronous mode  | No   |
| — IRT   | Yes  |
| — PROFlenergy   | Yes; per user program  |
| — Shared device   | Yes  |
| — Number of IO Controllers with shared device, max.                           | 4  |
| — 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   |
| <b>3. Interface</b>   |  |
| <b>Interface types</b>  |  |
| <ul style="list-style-type: none"> <li>• RJ 45 (Ethernet)</li> </ul>          | Yes; X3  |
| <ul style="list-style-type: none"> <li>• Number of ports</li> </ul>           | 1  |
| <ul style="list-style-type: none"> <li>• integrated switch</li> </ul>         | No   |
| <b>Protocols</b>  |  |
| <ul style="list-style-type: none"> <li>• IP protocol</li> </ul>               | Yes; IPv4  |
| <ul style="list-style-type: none"> <li>• PROFINET IO Controller</li> </ul>    | No   |
| <ul style="list-style-type: none"> <li>• PROFINET IO Device</li> </ul>        | No   |
| <ul style="list-style-type: none"> <li>• SIMATIC communication</li> </ul>     | Yes  |
| <ul style="list-style-type: none"> <li>• Open IE communication</li> </ul>     | Yes; Optionally also encrypted   |
| <ul style="list-style-type: none"> <li>• Web server</li> </ul>                | Yes  |
| <b>Interface types</b>  |  |
| <b>RJ 45 (Ethernet)</b>   |  |
| <ul style="list-style-type: none"> <li>• 100 Mbps</li> </ul>                  | Yes  |
| <ul style="list-style-type: none"> <li>• 1000 Mbps</li> </ul>                 | Yes; only possible at the X3 interface of the CPU  |

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| • Autonegotiation  | Yes  |
| • Autocrossing   | Yes  |
| • Industrial Ethernet status LED   | Yes  |
| <b>Protocols</b>   |  |
| PROFIsafe  | No   |
| <b>Number of connections</b>   |  |
| • Number of connections, max.  | 256; via integrated interfaces of the CPU and connected CPs / CMs                  |
| • Number of connections reserved for ES/HMI/web  | 10   |
| • Number of connections via integrated interfaces  | 128  |
| • Number of S7 routing paths   | 16   |
| <b>Redundancy mode</b>   |  |
| • H-Sync forwarding  | Yes  |
| <b>Media redundancy</b>  |  |
| — Media redundancy   | via the X1 or X2 interface   |
| — 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   |
| <b>SIMATIC communication</b>   |  |
| • 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)                                 |
| <b>Open IE communication</b>   |  |
| • 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; max. 118 multicast circuits   |
| • DHCP   | Yes  |
| • DNS  | Yes  |
| • SNMP   | Yes  |
| • DCP  | Yes  |
| • LLDP   | Yes  |
| • Encryption   | Yes; Optional  |
| <b>Web server</b>  |  |
| • 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   |
| <b>OPC UA</b>  |  |
| • Runtime license required   | Yes; "Medium" license required   |
| • OPC UA Client  | Yes; Data Access (registered Read/Write), Method Call                              |
| — Application authentication   | Yes  |
| — Security policies  | Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256    |
| — User authentication  | "anonymous" or by user name & password   |
| — Number of connections, max.  | 10   |
| — Number of nodes of the client interfaces, recommended max.                                   | 2 000  |
| — Number of elements for one call of OPC-UA_NodeGetHandleList/OPC-UA_ReadList/OPC-UA_WriteList | 300  |

|  |   |
|--|---|
| — Number of elements for one call of OPC-UA_NameSpaceGetIndexList, max.                                | 20  |
| — Number of elements for one call of OPC-UA_MethodGetHandleList, max.                                  | 100   |
| — Number of simultaneous calls of the client instructions for session management, per connection, max. | 1   |
| — Number of simultaneous calls of the client instructions for data access, per connection, max.        | 5   |
| — Number of registerable nodes, max.   | 5 000   |
| — Number of registerable method calls of OPC-UA_MethodCall, max.                                       | 100   |
| — Number of inputs/outputs when calling OPC-UA_MethodCall, max.  | 20  |
| ● OPC UA Server  | Yes; data access (read, write, subscribe), method call, alarms & condition (A&C), custom address space, role-based access control                               |
| — Application authentication   | Yes   |
| — Security policies  | available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss "anonymous" or by user name & password |
| — User authentication  | Yes   |
| — GDS support (certificate management)   | 48  |
| — Number of sessions, max.   | 100 000   |
| — Number of accessible variables, max.   | 20 000  |
| — Number of registerable nodes, max.   | 50  |
| — Number of subscriptions per session, max.  | 100 ms  |
| — Sampling interval, min.  | 100 ms  |
| — Publishing interval, min.  | 50; max. 20 concurrently running jobs each for asynchronous instructions OPC-UA_ServerMethodPre and OPC-UA_ServerMethodPost                                     |
| — Number of server methods, max.   | 20  |
| — Number of inputs/outputs per server method, max.   | 4 000; for 1 s sampling interval and 1 s send interval  |
| — Number of monitored items, recommended max.  | 10 of each "Server interfaces" / "Companion specification" type and 20 of the type "Reference namespace"  |
| — Number of server interfaces, max.  | 30 000  |
| — Number of nodes for user-defined server interfaces, max.   | Yes   |
| ● Alarms and Conditions  | 200   |
| — Number of program alarms   | 100   |
| — Number of alarms for system diagnostics  |   |
| <b>Further protocols</b>   |   |
| ● MODBUS   | Yes; MODBUS TCP   |
| <b>S7 message functions</b>  |   |
| Number of login stations for message functions, max.   | 64  |
| number of subscriptions, max.  | 500   |
| number of tags/attributes for subscriptions, max.  | 8 000   |
| 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   | 1 000   |
| ● Number of alarms for system diagnostics  | 200   |
| ● Number of alarms for motion technology objects   | 960   |
| <b>Test commissioning functions</b>  |   |
| Joint commission (Team Engineering)  | Yes; Parallel online access possible for up to 8 engineering systems  |
| Status block   | Yes; Up to 8 simultaneously (in total across all ES clients)  |
| Single step  | No  |
| Number of breakpoints  | 8   |
| Profiling  | Yes   |
| <b>Status/control</b>  |   |
| ● Status/control variable  | Yes   |
| ● Variables  | Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  |
| ● Number of variables, max.  |   |
| — of which status variables, max.  | 200; per job  |
| — of which control variables, max.   | 200; per job  |

|   |   |
|---|---|
| <b>Forcing</b>  |   |
| <ul style="list-style-type: none"> <li>• Forcing</li> <li>• Forcing, variables</li> <li>• Number of variables, max.</li> </ul>  | <p>Yes</p> <p>Peripheral inputs/outputs</p> <p>200</p>  |
| <b>Diagnostic buffer</b>  |   |
| <ul style="list-style-type: none"> <li>• present</li> <li>• Number of entries, max. <ul style="list-style-type: none"> <li>— of which powerfail-proof</li> </ul> </li> </ul>  | <p>Yes</p> <p>3 200</p> <p>500</p>  |
| <b>Traces</b>   |   |
| <ul style="list-style-type: none"> <li>• Number of configurable Traces</li> <li>• Memory size per trace, max.</li> </ul>  | <p>8</p> <p>512 kbyte</p>   |
| <b>Interrupts/diagnostics/status information</b>  |   |
| <b>Diagnostics indication LED</b>   |   |
| <ul style="list-style-type: none"> <li>• RUN/STOP LED</li> <li>• ERROR LED</li> <li>• MAINT LED</li> <li>• STOP ACTIVE LED</li> <li>• Connection display LINK TX/RX</li> </ul>  | <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>  |
| <b>Supported technology objects</b>   |   |
| <p>Motion Control</p> <ul style="list-style-type: none"> <li>• Number of available Motion Control resources for technology objects</li> <li>• Required Motion Control resources <ul style="list-style-type: none"> <li>— per speed-controlled axis</li> <li>— per positioning axis</li> <li>— per synchronous axis</li> <li>— per external encoder</li> <li>— per output cam</li> <li>— per cam track</li> <li>— per probe</li> </ul> </li> <li>• Number of available Extended Motion Control resources for technology objects</li> <li>• Required Extended Motion Control resources <ul style="list-style-type: none"> <li>— per cam (1 000 points and 50 segments)</li> <li>— per cam (10 000 points and 50 segments)</li> <li>— per cam (50 points and 600 segments)</li> <li>— per cam (50 points and 6 000 segments)</li> <li>— for each set of kinematics</li> <li>— per Interpreter</li> <li>— Per leading axis proxy</li> </ul> </li> <li>• kinematics functions <ul style="list-style-type: none"> <li>— kinematics with up to 4 interpolating axes</li> <li>— kinematics with 5 or more interpolating axes</li> <li>— user-defined kinematics</li> <li>— SIMATIC Safe Kinematics</li> </ul> </li> <li>• Positioning axis <ul style="list-style-type: none"> <li>— Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>— Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul> </li> </ul> | <p>Yes; Note: The number of technology objects affects the cycle time of the PLC program; selection guide via the TIA Selection Tool</p> <p>12 800</p> <p>40</p> <p>80</p> <p>160</p> <p>80</p> <p>20</p> <p>160</p> <p>40</p> <p>540</p> <p>2</p> <p>20</p> <p>2</p> <p>20</p> <p>30</p> <p>60</p> <p>3</p> <p>Yes; max. 3D + orientation</p> <p>No</p> <p>Yes</p> <p>No</p> <p>115</p> <p>160</p> |
| <p>Controller</p> <ul style="list-style-type: none"> <li>• PID_Compact</li> <li>• PID_3Step</li> <li>• PID-Temp</li> </ul>  | <p>Yes; Universal PID controller with integrated optimization</p> <p>Yes; PID controller with integrated optimization for valves</p> <p>Yes; PID controller with integrated optimization for temperature</p>  |
| <p>Counting and measuring</p> <ul style="list-style-type: none"> <li>• High-speed counter</li> </ul>  | <p>Yes</p>  |
| <b>Standards, approvals, certificates</b>   |   |
| Siemens Eco Profile (SEP)   | Siemens EcoTech   |
| Recycler Guide available  | Yes   |
| <b>Ecological footprint</b>   |   |
| Global warming potential  |   |

|  |          |
|--|----------|
| — global warming potential, (total) [CO2 eq]                   | 317 kg   |
| — global warming potential, (during production) [CO2 eq]       | 69.3 kg  |
| — global warming potential, (during operation) [CO2 eq]        | 255 kg   |
| — global warming potential, (after end of life cycle) [CO2 eq] | -7.02 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 and centralized |
| • Number of users                                 | 100                              |
| • Number of groups                                | 100                              |
| • Number of roles                                 | 50                               |

|  |                               |
|--|-------------------------------|
| 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. | 1 499 g |

|                 |        |                |                       |
|-----------------|--------|----------------|-----------------------|
| Classifications |        |                |                       |
|                 |        | <b>Version</b> | <b>Classification</b> |
|                 | eClass | 14             | 27-24-22-07           |
|                 | eClass | 12             | 27-24-22-07           |
|                 | eClass | 9.1            | 27-24-22-07           |
|                 | eClass | 9              | 27-24-22-07           |
|                 | eClass | 8              | 27-24-22-07           |

|        |     |             |
|--------|-----|-------------|
| eClass | 7.1 | 27-24-22-07 |
| eClass | 6   | 27-24-22-07 |
| ETIM   | 10  | EC000236    |
| ETIM   | 9   | EC000236    |
| ETIM   | 8   | EC000236    |
| ETIM   | 7   | EC000236    |

Approvals / Certificates

General Product Approval



[Miscellaneous](#)

[KC](#)

[Manufacturer Declaration](#)



General Product Approval

EMV

For use in hazardous locations



[KC](#)



[CCC-Ex](#)

[EM](#)

For use in hazardous locations

Maritime application



[Miscellaneous](#)



Maritime application

other

Environment



[PROFINET](#)



Siemens EcoTech



last modified:

7/17/2025