



Figure similar

SIPLUS S7-1500 CPU 1518-4 PN/DP based on 6ES7518-4AP00-0AB0 with conformal coating, 0...+60 °C, central processing unit with work memory 4 MB for program and 20 MB for data, 1st interface: PROFINET IRT with 2-port switch, 2nd interface, Ethernet, 3rd interface, Ethernet, 4th interface, PROFIBUS, 1 ns bit performance, SIMATIC Memory Card required

| General information  |   |
|--|---|
| Product type designation   | CPU 1518-4 PN/DP  |
| based on   | <a href="#">6ES7518-4AP00-0AB0</a>  |
| Product function   |   |
| <ul style="list-style-type: none"> <li>• I&amp;M data</li> <li>• Isochronous mode</li> </ul>               | <p>Yes; I&amp;M0 to I&amp;M3</p> <p>Yes; Distributed and central; with minimum OB 6x cycle of 125 µs (distributed) and 1 ms (central)</p> |
| Engineering with   |   |
| <ul style="list-style-type: none"> <li>• STEP 7 TIA Portal configurable/integrated from version</li> </ul> | see entry ID: 109746275   |
| 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  |   |
| <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)  | 1.55 A  |
| Inrush current, max.   | 2.4 A; Rated value  |
| $I^2t$   | 0.02 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.   | 24 W  |
| Memory   |   |
| Number of slots for SIMATIC memory card  | 1   |
| SIMATIC memory card required   | Yes   |
| Work memory  |   |
| <ul style="list-style-type: none"> <li>• integrated (for program)</li> </ul>                               | 6 Mbyte   |

|  |   |
|--|---|
| • integrated (for data)  | 60 Mbyte  |
| Load memory  |   |
| • Plug-in (SIMATIC Memory Card), max.                              | 32 Gbyte  |
| Backup   |   |
| • maintenance-free   | Yes   |
| <b>CPU processing times</b>  |   |
| for bit operations, typ.   | 1 ns  |
| for word operations, typ.  | 2 ns  |
| for fixed point arithmetic, typ.                                   | 2 ns  |
| for floating point arithmetic, typ.                                | 6 ns  |
| <b>CPU-blocks</b>  |   |
| Number of elements (total)   | 20 000; 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 100 µs  |
| • Number of process alarm OBs                                      | 50  |
| • Number of DPV1 alarm OBs   | 3   |
| • Number of isochronous mode OBs                                   | 2   |
| • 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  |
| <b>Counters, timers and their retentivity</b>                      |   |
| 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   |
| <b>Data areas and their retentivity</b>                            |   |
| Retentive data area (incl. timers, counters, flags), max.          | 768 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 700 KB                                     |
| Extended retentive data area (incl. timers, counters, flags), max. | 20 Mbyte; When using PS 6 0W 24/48/60 V DC HF   |

|                                     |   |
|-------------------------------------|---|
| <b>Flag</b>                         |   |
| • Size, max.                        | 16 kbyte  |
| • Number of clock memories          | 8; 8 clock memory bit, grouped into one clock memory byte   |
| <b>Data blocks</b>                  |   |
| • Retentivity adjustable            | Yes   |
| • Retentivity preset                | No  |
| <b>Local data</b>                   |   |
| • per priority class, max.          | 64 kbyte; max. 16 KB per block  |
| <b>Address area</b>                 |   |
| Number of IO modules                | 16 384; max. number of modules / submodules   |
| <b>I/O address area</b>             |   |
| • Inputs                            | 32 kbyte; All inputs are in the process image   |
| • Outputs                           | 32 kbyte; All outputs are in the process image  |
| <b>per integrated IO subsystem</b>  |   |
| — Inputs (volume)                   | 32 kbyte; max. 32 KB via X1; max. 8 KB via X2 or X4   |
| — Outputs (volume)                  | 32 kbyte; max. 32 KB via X1; max. 8 KB via X2 or X4   |
| <b>per CM/CP</b>                    |   |
| — Inputs (volume)                   | 8 kbyte   |
| — Outputs (volume)                  | 8 kbyte   |
| <b>Subprocess images</b>            |   |
| • Number of subprocess images, max. | 32  |
| <b>Hardware configuration</b>       |   |
| Number of distributed I/O 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>         |   |
| • integrated                        | 1   |
| • Via CM                            | 8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total   |
| <b>Number of IO Controllers</b>     |   |
| • integrated                        | 2   |
| • Via CM                            | 8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total   |
| <b>Rack</b>                         |   |
| • Modules per rack, max.            | 32; CPU + 31 modules  |
| • Number of lines, max.             | 1   |
| <b>PtP CM</b>                       |   |
| • Number of PtP CMs                 | the number of connectable PtP CMs is only limited by the number of available slots  |
| <b>Time of day</b>                  |   |
| <b>Clock</b>                        |   |
| • Type                              | Hardware clock  |
| • Backup time                       | 6 wk; At 40 °C ambient temperature, typically   |
| • Deviation per day, max.           | 10 s; Typ.: 2 s   |
| <b>Operating hours counter</b>      |   |
| • Number                            | 16  |
| <b>Clock synchronization</b>        |   |
| • supported                         | Yes   |
| • to DP, master                     | Yes   |
| • in AS, master                     | Yes   |
| • in AS, device                     | Yes   |
| • on Ethernet via NTP               | Yes   |
| <b>Interfaces</b>                   |   |
| Number of PROFINET interfaces       | 3   |
| Number of PROFIBUS interfaces       | 1   |
| <b>1. Interface</b>                 |   |
| <b>Interface types</b>              |   |
| • RJ 45 (Ethernet)                  | Yes; X1   |
| • Number of ports                   | 2   |
| • integrated switch                 | Yes   |

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|---|--|
| <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>   |  |
| — PG/OP communication   | Yes  |
| — Isochronous mode  | Yes  |
| — Direct data exchange  | Yes; Requirement: IRT and isochronous mode (MRPD optional)   |
| — IRT   | Yes  |
| — PROFIenergy   | Yes  |
| — Prioritized startup   | Yes; Max. 32 PROFINET devices  |
| — Number of connectable IO Devices, max.                                      | 512; In total, up to 1 000 distributed I/O devices can be connected via PROFIBUS or PROFINET   |
| — 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.   | 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 |
| <b>Update time for IRT</b>  |  |
| — for send cycle of 125 µs  | 125 µs   |
| — for send cycle of 187.5 µs  | 187.5 µs   |
| — 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 ... 3875 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>   |  |
| — PG/OP communication   | Yes  |
| — Isochronous mode  | No   |
| — IRT   | Yes; Minimum send cycle of 250 µs  |
| — PROFIenergy   | 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  |
| <b>2. Interface</b>   |  |
| <b>Interface types</b>  |  |
| • RJ 45 (Ethernet)  | Yes; X2  |
| • Number of ports   | 1  |
| • integrated switch   | No   |
| <b>Protocols</b>  |  |
| • IP protocol   | Yes; IPv4  |

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|---|--|
| • PROFINET IO Controller  | Yes  |
| • PROFINET IO Device  | Yes  |
| • SIMATIC communication   | Yes  |
| • Open IE communication   | Yes; Optionally also encrypted   |
| • Web server  | Yes  |
| • Media redundancy  | No   |
| <b>PROFINET IO Controller</b>   |  |
| <b>Services</b>   |  |
| — PG/OP communication   | Yes  |
| — Isochronous mode  | No   |
| — Direct data exchange  | No   |
| — IRT   | No   |
| — PROFenergy  | Yes; per user program  |
| — Prioritized startup   | No   |
| — Number of connectable IO Devices, max.                                      | 128; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET   |
| — Number of connectable IO Devices for RT, max.                               | 128  |
| — of which in line, max.  | 128  |
| — 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 |

|   |                       |
|---|-----------------------|
| <b>Update time for RT</b>                           |                       |
| — for send cycle of 1 ms                            | 1 ms to 512 ms        |
| <b>PROFINET IO Device</b>                           |                       |
| <b>Services</b>                                     |                       |
| — PG/OP communication                               | Yes                   |
| — Isochronous mode                                  | No                    |
| — IRT   | No                    |
| — PROFenergy  | Yes; per user program |
| — Prioritized startup                               | No                    |
| — 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 |

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| <b>3. Interface</b>                     |           |
| <b>Interface types</b>                  |           |
| • RJ 45 (Ethernet)                      | Yes; X3   |
| • Number of ports                       | 1         |
| • integrated switch                     | No        |
| <b>Protocols</b>                        |           |
| • IP protocol                           | Yes; IPv4 |
| • PROFINET IO Controller                | No        |
| • PROFINET IO Device                    | No        |
| • SIMATIC communication                 | Yes       |
| • Open IE communication                 | Yes       |
| • Web server                            | Yes       |
| <b>PROFIBUS DP master</b>               |           |
| <b>Services</b>                         |           |
| — activation/deactivation of DP devices | Yes       |

|                         |         |
|-------------------------|---------|
| <b>4. Interface</b>     |         |
| <b>Interface types</b>  |         |
| • RS 485                | Yes; X4 |
| • Number of ports       | 1       |
| <b>Protocols</b>        |         |
| • PROFIBUS DP master    | Yes     |
| • PROFIBUS DP device    | No      |
| • SIMATIC communication | Yes     |

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| <b>PROFIBUS DP master</b>                         |  |
| • Number of connections, max.                     | 48; for the integrated PROFIBUS DP interface   |
| • max. number of DP devices                       | 125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET |
| <b>Services</b>                                   |  |
| — PG/OP communication                             | Yes  |
| — Equidistance                                    | Yes  |
| — Isochronous mode                                | Yes  |
| — activation/deactivation of DP devices           | Yes  |
| <b>Interface types</b>                            |  |
| <b>RJ 45 (Ethernet)</b>                           |  |
| • 100 Mbps  | Yes  |
| • 1000 Mbps                                       | Yes; Only possible at the X3 interface of the CPU 1518   |
| • Autonegotiation                                 | Yes  |
| • Autocrossing                                    | Yes  |
| • Industrial Ethernet status LED                  | Yes  |
| <b>RS 485</b>                                     |  |
| • Transmission rate, max.                         | 12 Mbit/s  |
| <b>Protocols</b>                                  |  |
| PROFIsafe   | No   |
| <b>Number of connections</b>                      |  |
| • Number of connections, max.                     | 384; 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 | 320  |
| • Number of S7 routing paths                      | 64; in total, only 16 S7-Routing connections are supported via PROFIBUS                            |
| <b>Redundancy mode</b>                            |  |
| • H-Sync forwarding                               | Yes  |
| <b>Media redundancy</b>                           |  |
| — 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   |
| <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; 128 multicast circuits (of which max. 5 via X1)   |
| • DHCP  | Yes  |
| • DNS   | Yes  |
| • SNMP  | Yes  |
| • DCP   | Yes  |
| • LLDP  | Yes  |
| • Encryption                                      | Yes; Optional  |
| <b>Web server</b>                                 |  |
| • HTTP  | Yes; Standard and user pages   |

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| • HTTPS  | Yes; Standard and user pages   |
| <b>OPC UA</b>  |  |
| • Runtime license required   | Yes; "Large" license required  |
| • OPC UA Client  | Yes  |
| — Application authentication   | Yes  |
| — Security policies  | Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256                          |
| — User authentication  | "anonymous" or by user name & password   |
| — Number of connections, max.  | 40   |
| — Number of nodes of the client interfaces, recommended max.   | 5 000  |
| — Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/OPC_UA_WriteList, max.   | 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, custom address space                             |
| — Application authentication   | Yes  |
| — Security policies  | Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256                          |
| — 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.  | 20   |
| — 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  |
| <b>Further protocols</b>   |  |
| • MODBUS   | Yes; MODBUS TCP  |
| <b>Isochronous mode</b>  |  |
| Equidistance   | Yes  |
| <b>S7 message functions</b>  |  |
| Number of login stations for message functions, max.   | 64   |
| 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.   | 5 000  |
| Number of simultaneously active program alarms   |  |
| • Number of program alarms   | 4 000  |
| • Number of alarms for system diagnostics  | 1 000  |

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| • Number of alarms for motion technology objects                             | 480   |
| <b>Test commissioning functions</b>  |   |
| Joint commission (Team Engineering)  | Yes; Parallel online access possible for up to 10 engineering systems |
| Status block   | Yes; Up to 16 simultaneously (in total across all ES clients)         |
| Single step  | No  |
| Number of breakpoints  | 20  |
| Status/control   |   |
| • Status/control variable  | Yes   |
| • Variables  | Inputs, outputs, memory bits, DB, times, counters                     |
| • Number of variables, max.  |   |
| — of which status variables, max.  | 200; per job  |
| — of which control variables, max.   | 200; per job  |
| <b>Forcing</b>   |   |
| • Forcing  | Yes   |
| • Forcing, variables   | Inputs, outputs   |
| • Number of variables, max.  | 200   |
| Diagnostic buffer  |   |
| • present  | Yes   |
| • Number of entries, max.  | 3 200   |
| — of which powerfail-proof   | 1 000   |
| <b>Traces</b>  |   |
| • Number of configurable Traces  | 8; Up to 512 KB of data per trace are possible                        |
| <b>Interrupts/diagnostics/status information</b>                             |   |
| Diagnostics indication LED   |   |
| • RUN/STOP LED   | Yes   |
| • ERROR LED  | Yes   |
| • MAINT LED  | Yes   |
| • Connection display LINK TX/RX  | Yes   |
| <b>Supported technology objects</b>  |   |
| Motion Control   | Yes   |
| • Number of available Motion Control resources for technology objects        | 15 360  |
| • 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) | 140   |
| — Number of positioning axes at motion control cycle of 8 ms (typical value) | 192   |
| 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   |
| <b>Standards, approvals, certificates</b>                                    |   |
| Ecological footprint   |   |
| • environmental product declaration  | Yes   |
| Global warming potential   |   |
| — global warming potential, (total) [CO <sub>2</sub> eq]                     | 570 kg  |
| — global warming potential, (during production) [CO <sub>2</sub> eq]         | 96.9 kg   |
| — global warming potential, (during operation) [CO <sub>2</sub> eq]          | 483 kg  |

|   |   |
|---|---|
| — global warming potential, (after end of life cycle)<br>[CO <sub>2</sub> eq]   | -9.97 kg  |
| <b>Ambient conditions</b>   |   |
| Ambient temperature during operation  |   |
| • horizontal installation, min.   | 0 °C; = Tmin (incl. condensation/frost)   |
| • 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; = Tmin  |
| • 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   |
| • Ambient air temperature-barometric pressure-altitude  | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) |
| Relative humidity   |   |
| • With condensation, tested in accordance with IEC 60068-2-38, max.   | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions)   |
| Resistance  |   |
| Coolants and lubricants   |   |
| — Resistant to commercially available coolants and lubricants   | Yes; Incl. diesel and oil droplets in the air   |
| Use in stationary industrial systems  |   |
| — to biologically active substances according to EN 60721-3-3   | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request  |
| — to chemically active substances according to EN 60721-3-3   | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *  |
| — to mechanically active substances according to EN 60721-3-3   | Yes; Class 3S4 incl. sand, dust, *  |
| Use on ships/at sea   |   |
| — to biologically active substances according to EN 60721-3-6   | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request   |
| — to chemically active substances according to EN 60721-3-6   | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *  |
| — to mechanically active substances according to EN 60721-3-6   | Yes; Class 6S3 incl. sand, dust; *  |
| Usage in industrial process technology  |   |
| — Against chemically active substances acc. to EN 60654-4   | Yes; Class 3 (excluding trichlorethylene)   |
| — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04                            | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)                             |
| Remark  |   |
| — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04             | * The supplied plug covers must remain in place over the unused interfaces during operation!  |
| Conformal coating   |   |
| • Coatings for printed circuit board assemblies acc. to EN 61086  | Yes; Class 2 for high reliability   |
| • Protection against fouling acc. to EN 60664-3   | Yes; Type 1 protection  |
| • Military testing according to MIL-I-46058C, Amendment 7   | Yes; Discoloration of coating possible during service life  |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A   |
| <b>Configuration</b>  |   |
| Programming   |   |
| Programming language  |   |
| — LAD   | Yes   |
| — FBD   | Yes   |
| — STL   | Yes   |
| — SCL   | 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: Complete protection         | Yes                           |         |                |
| Cycle time monitoring                           |                               |         |                |
| • 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.                                 | 1 988 g                       |         |                |
| Classifications                                 |                               |         |                |
|   |                               | Version | Classification |
|   | 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       |
|   | IDEA                          | 4       | 3565           |
|   | UNSPSC                        | 15      | 32-15-17-05    |

#### Approvals / Certificates

##### General Product Approval


[Manufacturer Declaration](#)
[China RoHS](#)

[TUEV](#)

|     |                                |                      |             |
|-----|--------------------------------|----------------------|-------------|
| EMV | For use in hazardous locations | Maritime application | Environment |
|-----|--------------------------------|----------------------|-------------|

[KC](#)

[IECEx](#)

[ATEX](#)


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