



SIMATIC S7-1500F, CPU 1511F-1 PN, CENTRAL PROCESSING UNIT WITH WORKING MEMORY 225 KB FOR PROGRAM AND 1 MB FOR DATA, 1. INTERFACE: PROFINET IRT WITH 2 PORT SWITCH, 60 NS BIT-PERFORMANCE, SIMATIC MEMORY CARD NECESSARY

| General information   |   |
|---|---|
| Product type designation  | CPU 1511F-1 PN  |
| HW functional status  | FS03  |
| Firmware version  | V2.8  |
| Product function  |   |
| <ul style="list-style-type: none"> <li>I&amp;M data</li> <li>Isochronous mode</li> </ul>                              | Yes; I&M0 to I&M3<br>Yes; Distributed and central; with minimum OB 6x cycle of 625 $\mu$ s (distributed) and 1 ms (central) |
| Engineering with  |   |
| <ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>              | V16 (FW V2.8) / V15 (FW V2.5) or higher; with older TIA Portal versions configurable as 6ES7511-1FK01-0AB0                  |
| Configuration control   |   |
| via dataset   | Yes   |
| Display   |   |
| Screen diagonal [cm]  | 3.45 cm   |
| Control elements  |   |
| Number of keys  | 8   |
| Mode buttons  | 2   |
| Supply voltage  |   |
| 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> <li>Repeat rate, min.</li> </ul> | 5 ms<br>1/s   |
| Input current   |   |
| Current consumption (rated value)   | 0.7 A   |
| Current consumption, max.   | 0.95 A  |
| Inrush current, max.  | 1.9 A; Rated value  |
| $I^2t$  | 0.02 A <sup>2</sup> ·s  |
| Power   |   |
| Infeed power to the backplane bus   | 10 W  |
| Power consumption from the backplane bus (balanced)   | 5.5 W   |
| Power loss  |   |
| Power loss, typ.  | 5.7 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>  | 225 kbyte   |

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|--|---|
| <ul style="list-style-type: none"> <li>integrated (for data)</li> </ul>                      | 1 Mbyte   |
| <b>Load memory</b>   |   |
| <ul style="list-style-type: none"> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>        | 32 Gbyte  |
| <b>Backup</b>  |   |
| <ul style="list-style-type: none"> <li>maintenance-free</li> </ul>                           | Yes   |
| <b>CPU processing times</b>  |   |
| for bit operations, typ.   | 60 ns   |
| for word operations, typ.  | 72 ns   |
| for fixed point arithmetic, typ.   | 96 ns   |
| for floating point arithmetic, typ.  | 384 ns  |
| <b>CPU-blocks</b>  |   |
| Number of elements (total)   | 2 000; Blocks (OB, FB, FC, DB) and UDTs   |
| <b>DB</b>  |   |
| <ul style="list-style-type: none"> <li>Number range</li> </ul>                               | 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 |
| <ul style="list-style-type: none"> <li>Size, max.</li> </ul>                                 | 1 Mbyte; For DBs with absolute addressing, the max. size is 64 KB   |
| <b>FB</b>  |   |
| <ul style="list-style-type: none"> <li>Number range</li> </ul>                               | 0 ... 65 535  |
| <ul style="list-style-type: none"> <li>Size, max.</li> </ul>                                 | 150 kbyte   |
| <b>FC</b>  |   |
| <ul style="list-style-type: none"> <li>Number range</li> </ul>                               | 0 ... 65 535  |
| <ul style="list-style-type: none"> <li>Size, max.</li> </ul>                                 | 150 kbyte   |
| <b>OB</b>  |   |
| <ul style="list-style-type: none"> <li>Size, max.</li> </ul>                                 | 150 kbyte   |
| <ul style="list-style-type: none"> <li>Number of free cycle OBs</li> </ul>                   | 100   |
| <ul style="list-style-type: none"> <li>Number of time alarm OBs</li> </ul>                   | 20  |
| <ul style="list-style-type: none"> <li>Number of delay alarm OBs</li> </ul>                  | 20  |
| <ul style="list-style-type: none"> <li>Number of cyclic interrupt OBs</li> </ul>             | 20; With minimum OB 3x cycle of 500 μs  |
| <ul style="list-style-type: none"> <li>Number of process alarm OBs</li> </ul>                | 50  |
| <ul style="list-style-type: none"> <li>Number of DPV1 alarm OBs</li> </ul>                   | 3   |
| <ul style="list-style-type: none"> <li>Number of isochronous mode OBs</li> </ul>             | 2   |
| <ul style="list-style-type: none"> <li>Number of technology synchronous alarm OBs</li> </ul> | 2   |
| <ul style="list-style-type: none"> <li>Number of startup OBs</li> </ul>                      | 100   |
| <ul style="list-style-type: none"> <li>Number of asynchronous error OBs</li> </ul>           | 4   |
| <ul style="list-style-type: none"> <li>Number of synchronous error OBs</li> </ul>            | 2   |
| <ul style="list-style-type: none"> <li>Number of diagnostic alarm OBs</li> </ul>             | 1   |
| <b>Nesting depth</b>   |   |
| <ul style="list-style-type: none"> <li>per priority class</li> </ul>                         | 24; Up to 8 possible for F-blocks   |
| <b>Counters, timers and their retentivity</b>  |   |
| <b>S7 counter</b>  |   |
| <ul style="list-style-type: none"> <li>Number</li> </ul>                                     | 2 048   |
| Retentivity  |   |
| — adjustable   | Yes   |
| <b>IEC counter</b>   |   |
| <ul style="list-style-type: none"> <li>Number</li> </ul>                                     | Any (only limited by the main memory)   |
| Retentivity  |   |
| — adjustable   | Yes   |
| <b>S7 times</b>  |   |
| <ul style="list-style-type: none"> <li>Number</li> </ul>                                     | 2 048   |
| Retentivity  |   |
| — adjustable   | Yes   |
| <b>IEC timer</b>   |   |
| <ul style="list-style-type: none"> <li>Number</li> </ul>                                     | 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.                                    | 128 kbyte; In total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 88 KB                            |
| Extended retentive data area (incl. timers, counters, flags), max.                           | 1 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> </ul>                                 | 16 kbyte  |

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|---|---|
| <ul style="list-style-type: none"> <li>• Number of clock memories</li> </ul>  | 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  | 1 024; 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)   | 8 kbyte   |
| — Outputs (volume)  | 8 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  | 32; 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>  | 4; A maximum of 4 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>  | 1<br>4; A maximum of 4 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>• in AS, master</li> <li>• in AS, slave</li> <li>• on Ethernet via NTP</li> </ul>   | Yes<br>Yes<br>Yes<br>Yes  |
| <b>Interfaces</b>   |   |
| Number of PROFINET interfaces   | 1   |
| <b>1. Interface</b>   |   |
| <b>Interface types</b>  |   |
| <ul style="list-style-type: none"> <li>• RJ 45 (Ethernet)</li> <li>• Number of ports</li> <li>• integrated switch</li> </ul>  | Yes; X1<br>2<br>Yes   |
| <b>Protocols</b>  |   |
| <ul style="list-style-type: none"> <li>• IP protocol</li> <li>• PROFINET IO Controller</li> <li>• PROFINET IO Device</li> <li>• SIMATIC communication</li> <li>• Open IE communication</li> <li>• Web server</li> </ul> | Yes; IPv4<br>Yes<br>Yes<br>Yes<br>Yes; Optionally also encrypted<br>Yes   |

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| • Media redundancy  | Yes; MRP Automanager according to IEC 62439-2 Edition 2.0  |
| <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  |
| — PROFlenergy   | Yes  |
| — Prioritized startup   | Yes; Max. 32 PROFINET devices  |
| — Number of connectable IO Devices, max.                                      | 128; In total, up to 256 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET   |
| — Of which IO devices with IRT, max.  | 64   |
| — 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 IRT</b>  |  |
| — for send cycle of 250 µs  | 250 µs to 4 ms; Note: In the case of IRT with isochronous mode, the minimum update time of 625 µs of the isochronous OB is decisive                                    |
| — for send cycle of 500 µs  | 500 µs to 8 ms; Note: In the case of IRT with isochronous mode, the minimum update time of 625 µs of the isochronous OB is decisive                                    |
| — 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>   |  |
| — PG/OP communication   | Yes  |
| — Isochronous mode  | No   |
| — IRT   | Yes  |
| — PROFlenergy   | Yes; per user program  |
| — Shared device   | Yes  |
| — Number of IO Controllers with shared device, max.                           | 4  |
| — Asset management record   | Yes; per user program  |
| <b>2. Interface</b>   |  |
| <b>PROFINET IO Device</b>   |  |
| <b>Services</b>   |  |
| — PG/OP communication   | Yes  |
| — Isochronous mode  | No   |
| — IRT   | No   |
| — PROFlenergy   | Yes; per user program  |
| — Prioritized startup   | No   |
| — Shared device   | Yes  |
| — Number of IO Controllers with shared device, max.                           | 4  |
| — Asset management record   | Yes; per user program  |
| <b>Interface types</b>  |  |
| <b>RJ 45 (Ethernet)</b>   |  |
| • 100 Mbps  | Yes  |
| • Autonegotiation   | Yes  |
| • Autocrossing  | Yes  |
| • Industrial Ethernet status LED  | Yes  |
| <b>Protocols</b>  |  |

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| PROFIsafe  | Yes  |
| <b>Number of connections</b>   |  |
| • Number of connections, max.  | 96; 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  | 64   |
| • Number of S7 routing paths   | 16   |
| <b>Redundancy mode</b>   |  |
| • H-Sync forwarding  | Yes  |
| <b>Media redundancy</b>  |  |
| — MRP  | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 |
| — 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>   |  |
| • S7 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. 5 multicast circuits   |
| • DHCP   | No   |
| • SNMP   | Yes  |
| • DCP  | Yes  |
| • LLDP   | Yes  |
| <b>Web server</b>  |  |
| • HTTP   | Yes; Standard and user pages   |
| • HTTPS  | Yes; Standard and user pages   |
| <b>OPC UA</b>  |  |
| • Runtime license required   | Yes  |
| • 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.  | 4  |
| — Number of nodes of the client interfaces, recommended max.   | 1 000  |
| — 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  |

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| — Security policies  | Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 |
| — User authentication                                      | "anonymous" or by user name & password  |
| — Number of sessions, max.                                 | 32  |
| — Number of accessible variables, max.                     | 50 000  |
| — Number of registerable nodes, max.                       | 10 000  |
| — Number of subscriptions per session, max.                | 20  |
| — Sampling interval, min.                                  | 100 ms  |
| — Publishing interval, min.                                | 500 ms  |
| — Number of server methods, max.                           | 20  |
| — Number of inputs/outputs per server method, max.         | 20  |
| — Number of monitored items, recommended max.              | 1 000; for 1 s sampling interval and 1 s send interval                          |
| — Number of server interfaces, max.                        | 10  |
| — Number of nodes for user-defined server interfaces, max. | 1 000   |

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| <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. | 32  |
| Program alarms                                       | Yes   |
| Number of configurable program messages, max.        | 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH  |
| Number of loadable program messages in RUN, max.     | 2 500   |
| Number of simultaneously active program alarms       |   |
| • Number of program alarms                           | 600   |
| • Number of alarms for system diagnostics            | 100   |
| • Number of alarms for motion technology objects     | 80  |
| <b>Test commissioning functions</b>                  |   |
| Joint commission (Team Engineering)                  | Yes; Parallel online access possible for up to 5 engineering systems  |
| Status block   | Yes; Up to 8 simultaneously (in total across all ES clients)  |
| Single step  | No  |
| Number of breakpoints                                | 8   |
| <b>Status/control</b>                                |   |
| • Status/control variable                            | Yes; without fail-safe  |
| • Variables  | inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), 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; without fail-safe  |
| • Forcing, variables                                 | peripheral inputs/outputs (without fail-safe)   |
| • Number of variables, max.                          | 200   |
| <b>Diagnostic buffer</b>                             |   |
| • present  | Yes   |
| • Number of entries, max.                            | 1 000   |
| — of which powerfail-proof                           | 500   |
| <b>Traces</b>  |   |
| • Number of configurable Traces                      | 4; Up to 512 KB of data per trace are possible  |
| <b>Interrupts/diagnostics/status information</b>     |   |
| <b>Diagnostics indication LED</b>                    |   |
| • RUN/STOP LED                                       | Yes   |
| • ERROR LED  | Yes   |
| • MAINT LED  | Yes   |
| • STOP ACTIVE LED                                    | Yes   |
| • Connection display LINK TX/RX                      | Yes   |
| <b>Supported technology objects</b>                  |   |
| 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   | 15 360  |

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| technology objects  |   |
| <ul style="list-style-type: none"> <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>— for each set of kinematics</li> <li>— Per leading axis proxy</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>40</p> <p>80</p> <p>160</p> <p>80</p> <p>20</p> <p>160</p> <p>40</p> <p>512</p> <p>2</p> <p>20</p> <p>30</p> <p>3</p> <p>140</p> <p>192</p>  |
| Controller  |   |
| <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>  |
| Counting and measuring  |   |
| <ul style="list-style-type: none"> <li>• High-speed counter</li> </ul>  | Yes   |
| <b>Standards, approvals, certificates</b>   |   |
| Highest safety class achievable in safety mode  |   |
| <ul style="list-style-type: none"> <li>• Performance level according to ISO 13849-1</li> <li>• SIL acc. to IEC 61508</li> </ul>   | <p>PLe</p> <p>SIL 3</p>   |
| Probability of failure (for service life of 20 years and repair time of 100 hours)  |   |
| <ul style="list-style-type: none"> <li>— Low demand mode: PFDavg in accordance with SIL3</li> <li>— High demand/continuous mode: PFH in accordance with SIL3</li> </ul>   | <p>&lt; 2.00E-05</p> <p>&lt; 1.00E-09</p>   |
| <b>Ambient conditions</b>   |   |
| Ambient temperature during operation  |   |
| <ul style="list-style-type: none"> <li>• horizontal installation, min.</li> <li>• horizontal installation, max.</li> <li>• vertical installation, min.</li> <li>• vertical installation, max.</li> </ul>  | <p>-25 °C; No condensation</p> <p>60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off</p> <p>-25 °C; No condensation</p> <p>40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off</p> |
| Ambient temperature during storage/transportation   |   |
| <ul style="list-style-type: none"> <li>• min.</li> <li>• max.</li> </ul>  | <p>-40 °C</p> <p>70 °C</p>  |
| Altitude during operation relating to sea level   |   |
| <ul style="list-style-type: none"> <li>• Installation altitude above sea level, max.</li> </ul>   | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual  |
| <b>configuration / header</b>   |   |
| configuration / programming / header  |   |
| Programming language  |   |
| <ul style="list-style-type: none"> <li>— LAD</li> <li>— FBD</li> <li>— STL</li> <li>— SCL</li> <li>— GRAPH</li> </ul>   | <p>Yes; incl. failsafe</p> <p>Yes; incl. failsafe</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>  |
| Know-how protection   |   |
| <ul style="list-style-type: none"> <li>• User program protection/password protection</li> <li>• Copy protection</li> <li>• Block protection</li> </ul>  | <p>Yes</p> <p>Yes</p> <p>Yes</p>  |
| Access protection   |   |
| <ul style="list-style-type: none"> <li>• Password for display</li> </ul>  | Yes   |

- Protection level: Write protection
- Protection level: Read/write protection
- Protection level: Write protection for Failsafe
- Protection level: Complete protection

Yes; Specific write protection both for Standard and for Failsafe  
 Yes  
 Yes  
 Yes

programming / cycle time monitoring / header

- lower limit
- upper limit

adjustable minimum cycle time  
 adjustable maximum cycle time

**Dimensions**

|        |        |
|--------|--------|
| Width  | 35 mm  |
| Height | 147 mm |
| Depth  | 129 mm |

**Weights**

|                 |       |
|-----------------|-------|
| Weight, approx. | 405 g |
|-----------------|-------|

**last modified:**

3/12/2024 