



SIMATIC S7-1500T, CPU 1515TF-2 PN, central processing unit with 1.5 MB work memory for program and 4.5 MB for data, 1st interface: PROFINET IRT with 2-port switch, 2nd interface: PROFINET RT, 6 ns bit performance, SIMATIC Memory Card required - - - approvals and certificates according to entry 109816881 at support.industry.siemens.com to be considered! - -

General information	
Product type designation	CPU 1515TF-2 PN
HW functional status	FS05
Firmware version	V4.1
<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 375 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>	V21 (FW V4.1) / V18 (FW V3.0) or higher; configurable with older TIA Portal versions as 6ES7515-2UM01-0AB0
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)	0.65 A
Current consumption, max.	1.03 A
Inrush current, max.	1.15 A; Rated value
I <sup>2</sup> t	0.6 A <sup>2</sup> ·s
Power	
Infeed power to the backplane bus	12 W
Power consumption from the backplane bus (balanced)	6.2 W
Power loss	
Power loss, typ.	3.6 W
Memory	

Number of slots for SIMATIC memory card	1
SIMATIC memory card required	Yes
<b>Work memory</b>	
• integrated (for program)	1.5 Mbyte
• integrated (for data)	4.5 Mbyte
<b>Load memory</b>	
• Plug-in (SIMATIC Memory Card), max.	32 Gbyte
<b>Backup</b>	
• maintenance-free	Yes
<b>CPU processing times</b>	
for bit operations, typ.	6 ns
for word operations, typ.	7 ns
for fixed point arithmetic, typ.	9 ns
for floating point arithmetic, typ.	37 ns
<b>CPU-blocks</b>	
Number of elements (total)	8 000; Blocks (OB, FB, FC, DB) and UDTs
<b>DB</b>	
• 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.	4.5 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
<b>FB</b>	
• Number range	0 ... 65 535
• Size, max.	1 Mbyte
<b>FC</b>	
• Number range	0 ... 65 535
• Size, max.	1 Mbyte
<b>OB</b>	
• 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	2
• Number of startup OBs	100
• Number of asynchronous error OBs	4
• Number of synchronous error OBs	2
• Number of diagnostic alarm OBs	1
<b>Nesting depth</b>	
• per priority class	24; Up to 8 possible for F-blocks
<b>Counters, timers and their retentivity</b>	
<b>S7 counter</b>	
• Number	2 048
Retentivity	
— adjustable	Yes
<b>IEC counter</b>	
• Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes
<b>S7 times</b>	
• Number	2 048
Retentivity	
— adjustable	Yes
<b>IEC timer</b>	
• 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.	472 kbyte; in total; for bit memories, timers, counters, DBs, and technology data (axes)
Extended retentive data area (incl. timers, counters, flags), max.	4.5 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	8 192; 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
per integrated IO subsystem	
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
per CM/CP	
— 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 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>	
• 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	64
<b>Clock synchronization</b>	
• supported	Yes
• to DP, master	Yes; via PROFIBUS CM / CP
• on DP, device	Yes; via PROFIBUS CM / CP
• in AS, master	Yes
• in AS, device	Yes
• on Ethernet via NTP	Yes
<b>Interfaces</b>	
Number of PROFINET interfaces	2
<b>1. Interface</b>	
<b>Interface types</b>	
• RJ 45 (Ethernet)	Yes; X1

• 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
• 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
— Dynamic Frame Packing (DFP)	Yes
— PROFINergy	Yes; per user program
— Prioritized startup	Yes; Max. 32 PROFINET devices
— Number of connectable IO Devices, max.	256; 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
— Number of connectable IO Devices for RT, max.	256
— of which in line, max.	256
— 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 375 µs of the isochronous OB is decisive
— 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
— Dynamic Frame Packing (DFP)	No
— PROFINergy	Yes; per user program
— Prioritized startup	Yes
— 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
• 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>	
— Isochronous mode	No
— Direct data exchange	No
— IRT	No
— Dynamic Frame Packing (DFP)	No
— PROFINergy	Yes; per user program
— Prioritized startup	No
— Number of connectable IO Devices, max.	32; in total, up to 1024 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET
— Number of connectable IO Devices for RT, max.	32
— of which in line, max.	32
— Number of IO Devices that can be simultaneously activated/deactivated, max.	8; in total across all interfaces
— IO Devices changing during operation (partner ports), supported	Yes
— 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 RT</b>	
— for send cycle of 1 ms	1 ms to 512 ms
<b>PROFINET IO Device</b>	
<b>Services</b>	
— Isochronous mode	No
— IRT	No
— Dynamic Frame Packing (DFP)	No
— PROFINergy	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
— PROFINET Security Class	SNMP Configuration and DCP Read Only
<b>Interface types</b>	
<b>RJ 45 (Ethernet)</b>	
• 100 Mbps	Yes
• Autonegotiation	Yes
• Autocrossing	Yes
• Industrial Ethernet status LED	Yes
<b>Protocols</b>	
PROFIsafe	Yes; V2.4 / V2.6
<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>	
• PROFINET system redundancy (S2)	No
• PROFINET system redundancy (R1)	No
• 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; 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.	100
— 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, 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; for OPC-UA_MethodCall 100 in total (no limit per connection)
— Number of registerable nodes, max.	5 000
— Number of registerable method calls of OPC-UA_MethodCall, max.	100
— Number of inputs/outputs when calling	20

OPC-UA-MethodCall, max.	
<ul style="list-style-type: none"> <li>● OPC UA Server <ul style="list-style-type: none"> <li>— Application authentication</li> <li>— Security policies</li> <li>— User authentication</li> <li>— GDS support (certificate management)</li> <li>— Number of sessions, max.</li> <li>— Number of accessible variables, max.</li> <li>— Number of registerable nodes, max.</li> <li>— Number of subscriptions per session, max.</li> <li>— Sampling interval, min.</li> <li>— Publishing interval, min.</li> <li>— Number of server methods, max.</li> <li>— Number of inputs/outputs per server method, max.</li> <li>— Number of monitored items, recommended max.</li> <li>— Number of server interfaces, max.</li> <li>— Number of nodes for user-defined server interfaces, max.</li> </ul> </li> <li>● Alarms and Conditions <ul style="list-style-type: none"> <li>— Number of program alarms</li> <li>— Number of alarms for system diagnostics</li> </ul> </li> </ul>	<p>Yes; data access (read, write, subscribe), method call, alarms &amp; condition (A&amp;C), custom address space, role-based access control</p> <p>Yes</p> <p>available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss</p> <p>"anonymous" or by user name &amp; password</p> <p>Yes</p> <p>48</p> <p>100 000</p> <p>20 000</p> <p>50</p> <p>100 ms</p> <p>100 ms</p> <p>1 000; max. 50 concurrently running jobs each for asynchronous instructions OPC-UA-ServerMethodPre and OPC-UA-ServerMethodPost</p> <p>20</p> <p>4 000; for 1 s sampling interval and 1 s send interval</p> <p>10 of each "Server interfaces" / "Companion specification" type and 20 of the type "Reference namespace"</p> <p>30 000</p> <p>Yes</p> <p>200</p> <p>100</p>
<b>Further protocols</b>	
<ul style="list-style-type: none"> <li>● MODBUS</li> </ul>	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	
<ul style="list-style-type: none"> <li>● Number of program alarms</li> <li>● Number of alarms for system diagnostics</li> <li>● Number of alarms for motion technology objects</li> </ul>	<p>1 000</p> <p>200</p> <p>160</p>
<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>	
<ul style="list-style-type: none"> <li>● Status/control variable</li> <li>● Variables</li> <li>● Number of variables, max. <ul style="list-style-type: none"> <li>— of which status variables, max.</li> <li>— of which control variables, max.</li> </ul> </li> </ul>	<p>Yes; without fail-safe</p> <p>inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters</p> <p>200; per job</p> <p>200; per job</p>
<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; without fail-safe</p> <p>peripheral inputs/outputs (without fail-safe)</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> </ul>	4
<ul style="list-style-type: none"> <li>• Memory size per trace, max.</li> </ul>	512 kbyte
<b>Interrupts/diagnostics/status information</b>	
Diagnostics indication LED	
<ul style="list-style-type: none"> <li>• RUN/STOP LED</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• ERROR LED</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• MAINT LED</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• STOP ACTIVE LED</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Connection display LINK TX/RX</li> </ul>	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
<ul style="list-style-type: none"> <li>• Number of available Motion Control resources for technology objects</li> </ul>	2 400
<ul style="list-style-type: none"> <li>• Required Motion Control resources <ul style="list-style-type: none"> <li>— per speed-controlled axis</li> </ul> </li> </ul>	40
<ul style="list-style-type: none"> <li>— per positioning axis</li> </ul>	80
<ul style="list-style-type: none"> <li>— per synchronous axis</li> </ul>	160
<ul style="list-style-type: none"> <li>— per external encoder</li> </ul>	80
<ul style="list-style-type: none"> <li>— per output cam</li> </ul>	20
<ul style="list-style-type: none"> <li>— per cam track</li> </ul>	160
<ul style="list-style-type: none"> <li>— per probe</li> </ul>	40
<ul style="list-style-type: none"> <li>• Number of available Extended Motion Control resources for technology objects</li> </ul>	120
<ul style="list-style-type: none"> <li>• Required Extended Motion Control resources <ul style="list-style-type: none"> <li>— per cam (1 000 points and 50 segments)</li> </ul> </li> </ul>	2
<ul style="list-style-type: none"> <li>— per cam (10 000 points and 50 segments)</li> </ul>	20
<ul style="list-style-type: none"> <li>— per cam (50 points and 600 segments)</li> </ul>	2
<ul style="list-style-type: none"> <li>— per cam (50 points and 6 000 segments)</li> </ul>	20
<ul style="list-style-type: none"> <li>— for each set of kinematics</li> </ul>	30
<ul style="list-style-type: none"> <li>— per Interpreter</li> </ul>	60
<ul style="list-style-type: none"> <li>— Per leading axis proxy</li> </ul>	3
<ul style="list-style-type: none"> <li>• kinematics functions <ul style="list-style-type: none"> <li>— kinematics with up to 4 interpolating axes</li> </ul> </li> </ul>	Yes; max. 3D + orientation
<ul style="list-style-type: none"> <li>— kinematics with 5 or more interpolating axes</li> </ul>	No
<ul style="list-style-type: none"> <li>— user-defined kinematics</li> </ul>	No
<ul style="list-style-type: none"> <li>— SIMATIC Safe Kinematics</li> </ul>	No
<ul style="list-style-type: none"> <li>• Positioning axis <ul style="list-style-type: none"> <li>— Number of positioning axes at motion control cycle of 4 ms (typical value)</li> </ul> </li> </ul>	11
<ul style="list-style-type: none"> <li>— Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul>	20
Controller	
<ul style="list-style-type: none"> <li>• PID_Compact</li> </ul>	Yes; Universal PID controller with integrated optimization
<ul style="list-style-type: none"> <li>• PID_3Step</li> </ul>	Yes; PID controller with integrated optimization for valves
<ul style="list-style-type: none"> <li>• PID-Temp</li> </ul>	Yes; PID controller with integrated optimization for temperature
Counting and measuring	
<ul style="list-style-type: none"> <li>• High-speed counter</li> </ul>	Yes
<b>Standards, approvals, certificates</b>	
Siemens Eco Profile (SEP)	Siemens EcoTech
Recycler Guide available	Yes
<b>Ecological footprint</b>	
<ul style="list-style-type: none"> <li>• environmental product declaration</li> </ul>	Yes
<b>Global warming potential</b>	
<ul style="list-style-type: none"> <li>— global warming potential, (total) [CO2 eq]</li> </ul>	100 kg
<ul style="list-style-type: none"> <li>— global warming potential, (during production) [CO2 eq]</li> </ul>	25.8 kg
<ul style="list-style-type: none"> <li>— global warming potential, (during operation) [CO2 eq]</li> </ul>	75.2 kg
<ul style="list-style-type: none"> <li>— global warming potential, (after end of life cycle) [CO2 eq]</li> </ul>	-0.83 kg

<b>Highest safety class achievable in safety mode</b>	
<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 SIL 3</p>
<b>Probability of failure (for service life of 20 years and repair time of 100 hours)</b>	
<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 &lt; 1.00E-09</p>
<b>Security</b>	
PROFINET Security Class	1
signed firmware update	Yes
Secure Boot	Yes
safely removing data	Yes
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
<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>-30 °C; No condensation 60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off -30 °C; No condensation 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off</p>
<b>Ambient temperature during storage/transportation</b>	
<ul style="list-style-type: none"> <li>• min.</li> <li>• max.</li> </ul>	<p>-40 °C 70 °C</p>
<b>Altitude during operation relating to sea level</b>	
<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</b>	
<b>Programming</b>	
<b>Programming language</b>	
<ul style="list-style-type: none"> <li>— LAD</li> <li>— FBD</li> <li>— STL</li> <li>— SCL</li> <li>— CFC</li> <li>— GRAPH</li> </ul>	<p>Yes; incl. failsafe Yes; incl. failsafe Yes Yes Yes; either CFC or failsafe functionality Yes</p>
<b>Know-how protection</b>	
<ul style="list-style-type: none"> <li>• User program protection/password protection</li> <li>• Copy protection</li> <li>• Block protection</li> </ul>	<p>Yes Yes Yes</p>
<b>Access protection</b>	
<ul style="list-style-type: none"> <li>• protection of confidential configuration data</li> <li>• Password for display</li> <li>• Protection level: Write protection</li> <li>• Protection level: Read/write protection</li> <li>• Protection level: Write protection for Failsafe</li> <li>• Protection level: Complete protection</li> <li>• User administration</li> <li>• Number of users</li> <li>• Number of groups</li> <li>• Number of roles</li> </ul>	<p>Yes Yes Yes Yes Yes Yes Yes; device-wide and centralized 100 100 50</p>
<b>Cycle time monitoring</b>	
<ul style="list-style-type: none"> <li>• lower limit</li> <li>• upper limit</li> </ul>	<p>adjustable minimum cycle time adjustable maximum cycle time</p>
<b>Dimensions</b>	
Width	70 mm
Height	147 mm
Depth	129 mm
<b>Weights</b>	
Weight, approx.	456 g
<b>Classifications</b>	

	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



[Miscellaneous](#)



General Product Approval	Test Certificates	Maritime application	other
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[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



[Confirmation](#)

other	Environment
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[Environmental Confirmations](#)

[Environmental Confirmations](#)

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5/20/2026