## SIEMENS

## Data sheet

## 6ES7511-1AK02-0AB0



SIMATIC S7-1500, CPU 1511-1 PN, Central processing unit with working memory 150 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 1511-1 PN
HW functional status	FS03
Firmware version	V2.9
Product function	
• I&M data	Yes; I&M0 to I&M3
Isochronous mode	Yes; Distributed and central; with minimum OB 6x cycle of 625 $\mu s$ (distributed) and 1 ms (central)
Engineering with	
<ul> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V17 (FW V2.9) / V15 (FW V2.5) or higher; with older TIA Portal versions configurable as 6ES7511-1AK01-0AB0
Configuration control	
via dataset	Yes
Display	
Screen diagonal [cm]	3.45 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> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
Repeat rate, min.	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
l²t	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> <li>integrated (for program)</li> </ul>	150 kbyte
integrated (for data)	1 Mbyte
Load memory	
Plug-in (SIMATIC Memory Card), max.	32 Gbyte
Backup	
maintenance-free	Yes
CPU processing times	
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
CPU-blocks	
Number of elements (total)	4 000; 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.	1 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	
Number range	0 65 535
• Size, max.	150 kbyte
FC	
Number range	0 65 535
• Size, max.	150 kbyte
OB	
• Size, max.	150 kbyte
<ul> <li>Number of free cycle OBs</li> </ul>	100
<ul> <li>Number of time alarm OBs</li> </ul>	20
<ul> <li>Number of delay alarm OBs</li> </ul>	20
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	20; With minimum OB 3x cycle of 500 µs
<ul> <li>Number of process alarm OBs</li> </ul>	50
<ul> <li>Number of DPV1 alarm OBs</li> </ul>	3
<ul> <li>Number of isochronous mode OBs</li> </ul>	2
<ul> <li>Number of technology synchronous alarm OBs</li> </ul>	2
<ul> <li>Number of startup OBs</li> </ul>	100
<ul> <li>Number of asynchronous error OBs</li> </ul>	4
<ul> <li>Number of synchronous error OBs</li> </ul>	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.	128 kbyte; In total; available retentive memory for bit memories, timers,

	counters DPa and toohnology data (avea), 00 KD
Extended retentive data area (incl. timers, counters, flags),	counters, DBs, and technology data (axes): 88 KB 1 Mbyte; When using PS 6 0W 24/48/60 V DC HF
max.	
Flag	
• Size, max.	16 kbyte
<ul> <li>Number of clock memories</li> </ul>	8; 8 clock memory bit, grouped into one clock memory byte
Data blocks	
Retentivity adjustable	Yes
Retentivity preset	No
Local data	
<ul> <li>per priority class, max.</li> </ul>	64 kbyte; max. 16 KB per block
Address area	
Number of IO modules	1 024; max. number of modules / submodules
I/O address area	
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
Subprocess images	
<ul> <li>Number of subprocess images, max.</li> </ul>	32
Hardware configuration	
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)
Number of DP masters	
● Via CM	4; A maximum of 4 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total
Number of IO Controllers	
<ul> <li>integrated</li> </ul>	1
• Via CM	4; A maximum of 4 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total
Rack	
<ul> <li>Modules per rack, max.</li> </ul>	32; CPU + 31 modules
Number of lines, max.	1
PtP CM	
Number of PtP CMs	the number of connectable PtP CMs is only limited by the number of available slots
Time of day	
Clock	
• Туре	Hardware clock
Backup time	6 wk; At 40 °C ambient temperature, typically
Deviation per day, max.	10 s; Typ.: 2 s
Operating hours counter	
Number	16
Clock synchronization	
supported	Yes
• in AS, master	Yes
• in AS, slave	Yes
on Ethernet via NTP	Yes
Interfaces	
Number of PROFINET interfaces	1
1. Interface	
Interface types	
RJ 45 (Ethernet)	Yes; X1
Number of ports	2
<ul> <li>integrated switch</li> </ul>	Yes

Protocols	
• 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
PROFINET IO Controller	
Services	
— PG/OP communication	Yes
<ul> <li>— Isochronous mode</li> </ul>	Yes
<ul> <li>— Direct data exchange</li> </ul>	Yes; Requirement: IRT and isochronous mode (MRPD optional)
— IRT	Yes
— PROFlenergy	Yes; per user program
— Prioritized startup	Yes; Max. 32 PROFINET devices
<ul> <li>Number of connectable IO Devices, max.</li> </ul>	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
<ul> <li>Number of connectable IO Devices for RT, max.</li> </ul>	128
— of which in line, max.	128
<ul> <li>— Of which if fine, max.</li> <li>— Number of IO Devices that can be</li> </ul>	8; in total across all interfaces
simultaneously activated/deactivated, max.	
— 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
Update time for IRT	quantity of configured user data
— 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 $625 \mu s$ of the isochronous OB is decisive
— for send cycle of 500 μs	500 $\mu s$ to 8 ms; Note: In the case of IRT with isochronous mode, the minimum update time of 625 $\mu s$ 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
<ul> <li>With IRT and parameterization of "odd" send cycles</li> </ul>	Update time = set "odd" send clock (any multiple of 125 $\mu$ s: 375 $\mu$ s, 625 $\mu$ s 3 875 $\mu$ s)
Update time for RT	
— for send cycle of 250 μs	250 µs to 128 ms
— for send cycle of 500 μs	500 µs to 256 ms
— for send cycle of 1 ms	1 ms to 512 ms
— for send cycle of 2 ms	2 ms to 512 ms
— for send cycle of 4 ms	4 ms to 512 ms
PROFINET IO Device	
Services	Y.
— PG/OP communication	Yes
— Isochronous mode	No
- IRT	Yes
<ul> <li>— PROFlenergy</li> <li>— Shared device</li> </ul>	Yes; per user program Yes
<ul> <li>— Shared device</li> <li>— Number of IO Controllers with shared device,</li> </ul>	4
max.	-
- activation/deactivation of I-devices	Yes; per user program
— Asset management record	Yes; per user program
Interface types	
RJ 45 (Ethernet)	
• 100 Mbps	Yes
Autonegotiation	Yes
Autocrossing	Yes
Industrial Ethernet status LED	Yes
Protocols	

Notice         Notice           Number of connections, max.         96, via integrated interfaces of the CPU and connected CPs / CMs           Number of connections revered for ESHMLiveb         10           Number of connections via integrated interfaces         64           Number of connections via integrated interfaces         64           H-Marker of Knowling         Yes           Media redundancy         only via 1st interface (X1)          MRP         Yes, MRP Automanaper according to IEC 62439-2 Edition 2.0, MRP          MRP Interconnection, supported         Yes, early NRP Chilem          MRP Interconnection, supported         Yes, encryption with TLS V1 3 pre-selected          Switchover fine on line break, typ.         200 ms, Fer MRP, bumpless for MRPD          Number of stations in the ring, max.         See online help (S7 communication, as client           + S7 communication, as client         Yes           + S7 communication, as client         Yes           + S80 Communication         Yes           - Dota length, max.         See online help (S7 communication, user data size)           DPanel Ecommunication         Yes           - Dota length, max.         See online help (S7 communication, user data size)           DPanel Ecommunication         Yes           - DOT multicast         Yes     <	PROFIsafe	No
Aurober of connectors. max.     Aurober of connectors. max.     Aurober of connectors. max.     Aurober of connectors. was integrated interfaces of the CPU and connected CPe / CMs     Aurober of S7 nontrop paths     Aurober of Aurober paths     Aurob		
Number of connections integrated interfaces     Number of S7 routing paths     Number of standard interfaces, max,     Number of standard interfaces, max,     Number of standard interfaces, max,     Number of standard interface, max,     Number of		96: via integrated interfaces of the CPLL and connected CPs / CMs
• Number of connections via integrated interfaces         64           • Number of S routing paths         16           • Hedia redundancy         only via 1st interface (X1)           • Media redundancy         only via 1st interface (X1)           • MRP         Yes.           • MRP         Yes.           • MRP         Yes.           • MRP interconnection, supported         Yes.           • MRP interconnection, supported         Yes.           • MRP of communication         Yes.           • MRP of communication         Yes.           • PGO-PC communication         Yes.           • PGO-PC communication         Yes.           • PGO-PC communication         Yes.           • S7 coming         Yes           • S7 conting         Yes.           • S7 conting         Yes.           • S7 conting         Yes.           • S7 conting         Yes.           • S7 conting the right, max.         Yes.           • S8 control passive connections per port.         Yes.           • S8 control passive connections per port.         Yes.           • S90         Yes.           • Dota length, max.         Yes.           • Dotal length, max.         Yes.		-
• Number of \$7 routing paths         16           Redundancy         • H-Sync forwarding         Yes           • Media redundancy         only via 1st interface (X1)         • MRP           • MRP         Yes, IMP Automanager according to EC 62439-2 Edition 2.0, MRP           • MRP Interconnection, supported         Yes, IMP Automanager according to EC 62439-2 Edition 3.0           • MRP Interconnection, supported         Yes, IMP Automanager according to EC 62439-2 Edition 3.0           • MRP Interconnection, supported         Yes, IMP Automanager according to EC 62439-2 Edition 3.0           • MRP Interconnection, supported         Yes, IMP Automanager according to EC 62439-2 Edition 3.0           • MRP Interconnection, supported         Yes, IMP Automanager according to EC 62439-2 Edition 3.0           • MRP Domunication         Yes, encryption with TLS VI 3 pre-selected           • S7 communication         Yes, encryption with TLS VI 3 pre-selected           • FO/OP Communication         Yes, encryption with TLS VI 3 pre-selected           • S7 communication, as client         Yes           • Edit degith, max.         See online help (S7 communication, user data size)           • DOP In Edits         Yes           • Boo n-TCP (RFC1006)         Yes           • DDP maticast         Yes, Yes           • DDP         Yes           • DMR         Y		
Bedundancy mode     0 <ul> <li>H-Sync forwarding</li> <li>Yes</li> </ul> <ul> <li>Media redundancy</li> <li>Media redundancy</li> </ul> only via 1st interface (X1) <ul> <li>MRP</li> <li>MRP</li> <li>MRP interconnection, supported</li> <li>Switchover time on line break, typ.</li> <li>Switchover time on line break, typ.</li> <li>Switchover time on line break, typ.</li> <li>Number of stations in the ring, max.</li> </ul> 200 ms. For MRP. bumpless for MRPD <ul> <li>MRP Operannuclation</li> <li>Strowning</li> <li>Yes</li> <li>Strowning</li> <li>Yes</li> <li>Strowning</li> <li>Yes</li> <li>Strowning</li> <li>Yes</li> <li>Strowning</li> <li>Yes</li> <li>Strowninectation, so client</li> <li>Yes</li> <li>Strowninectation</li> <li>Yes</li> <li>Strowninectation, so client</li> <li>Yes</li> <li>Strowninectation, so client</li> <li>Yes</li> <li>Strowninectation, so client</li> <li>Yes</li> <li>Strowninectation, so client</li> <li>Yes</li> <li>Strowninectation</li> <li>Yes</li> <li>Stro</li></ul>	-	
•• H-Sync forwarding     Yes       Media redundancy     only via 1st interface (X1)		
Media redundancy         only via 1st interface (X1)		Yes
<ul> <li>MRP</li> <li>MRP</li> <li>MRP</li> <li>MRP</li> <li>MRP</li> <li>MRP</li> <li>MRP</li> <li>MRP</li> <li>MRPD</li> <li>MRPD<td></td><td>only via 1st interface (X1)</td></li></ul>		only via 1st interface (X1)
<ul> <li>MRP Interconnection, supported</li> <li>MRPD</li> <li>MRPD</li> <li>MRPD</li> <li>Switchover time on line break, typ.</li> <li>Soltations in the ring, max.</li> <li>Soltation, as client</li> <li>Yes</li> <li>Soltation in the ring, max.</li> <li>Soltation in the ring.</li> <li>Yes</li> <li>Yes</li> <li>Soltation in the ring.</li> <li>Yes</li> <li>Yes</li> <li>Soltation in the ring.</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Soltation in the ring.</li> <li>Yes</li>     &lt;</ul>	— MRP	
MRPD         Yes; Requirement, IRT          Switchwer time on line break, typ.         200 ms; For MRP, bumpless for MRPD		-
- Switchover time on line break, typ. - Number of stations in the ring, max. 50 SIMATIC communication Ser routing SF rout		
Number of stations in the ring, max.         50           SIMATIC communication         Yes, encryption with TLS V1.3 pre-selected           • PRO/OP communication, as server         Yes           • S7 communication, as server         Yes           • S7 communication, as server         Yes           • S7 communication, as client         Yes           • User data per job, max.         See online help (S7 communication, user data size)           Open II: communication         Yes           - Data length, max.         See online help (S7 communication, user data size)           Open II: communication         Yes           - Data length, max.         See online help (S7 communication user data size)           Open II: communication         Yes           - Data length, max.         See online help (S7 communication user data size)           OPC W         Yes           - Data length, max.         Skyle; 1472 byles for UDP broadcast           - UDP muticast         Yes, Max, 5 muticast circuits           - Data length, max.         Skyle; 1472 byles for UDP broadcast           - UDP muticast         Yes, Max, 5 muticast circuits           - DATA         Yes           - DNS         Yes           - DROPC         Yes           - Encryption         Yes; Standard and u		
SIMATIC communication     Yes; encryption with TLS V1.3 pre-selected       • PG/OP communication, as server     Yes       • S7 communication, as client     Yes       • User data per job, max.     See online help (S7 communication, user data size)       Open IE communication     Yes       • TCP/IP     Yes       - Data length, max.     64 kbyte       - supported     Yes       • ISO-on-TCP (RFC1006)     Yes       - Data length, max.     64 kbyte       • UDP     Yes       - Data length, max.     64 kbyte       • UDP     Yes       - Data length, max.     64 kbyte       • UDP     Yes       - Data length, max.     64 kbyte       • UDP     Yes       - Data length, max.     95 kbyte; 1472 bytes for UDP broadcast       - UDP muticast     Yes; Max. 5 muticast circuits       • DHCP     Yes       • DNS     Yes       • DNS     Yes       • DRDP     Yes		
PG/OP communication     Yes; encryption with TLS V1.3 pre-selected     S7 communication, as server     Yes     S7 communication, as client     Ves     Ves     S7 communication, as client     Ves     User data per job, max.     See online help (S7 communication, user data size)  Open II: communication     Ves		
<ul> <li>S7 routing</li> <li>Yes</li> <li>S7 communication, as server</li> <li>Yes</li> <li>Ves</li> <li>User data per job, max.</li> <li>See online help (S7 communication, user data size)</li> <li>Open IE communication</li> <li>TCP/IP</li> <li>TCP/IP</li> <li>Data length, max.</li> <li>Several passive connections per port, supported</li> <li>ISO-on-TCP (RFC1006)</li> <li>Yes</li> <li>ISO-an TCP (RFC1006)</li> <li>Yes</li> <li>UDP</li> <li>Data length, max.</li> <li>Ak byte</li> <li>UDP</li> <li>Data length, max.</li> <li>Ak byte</li> <li>Ves</li> <li>UDP</li> <li>Yes</li> <li>Ves</li> <li>Ves</li> <li>UDP</li> <li>Yes</li> <li>Ves</li> <li>SNMP</li> <li>Ves</li> <li>Ves</li> <li>SNMP</li> <li>Ves</li> <li>Ves</li></ul>		Voc: encountion with TLS V/1.2 pro-colorted
<ul> <li>S7 communication, as server</li> <li>S7 communication, as client</li> <li>Ves</li> <li>S7 communication, as client</li> <li>Ves</li> <li>See online help (S7 communication, user data size)</li> </ul> Open IE communication <ul> <li>TCP/IP</li> <li>Data length, max.</li> <li>See online help (S7 communication, user data size)</li> </ul> Open IE communication <ul> <li>TCP/IP</li> <li>Data length, max.</li> <li>G4 kbyte</li> <li>several passive connections per port, supported</li> <li>ISD-on-TCP (RFC1006)</li> <li>Data length, max.</li> <li>G4 kbyte</li> <li>UDP</li> <li>Data length, max.</li> <li>G4 kbyte</li> <li>UDP</li> <li>Data length, max.</li> <li>SMNP</li> <li>DP multicast</li> <li>Ves</li> <li>SMNP</li> <li>Ves</li> <li>SMNP</li> <li>Ves</li> <li>SMNP</li> <li>Ves</li> <li>SMNP</li> <li>Ves</li> <li>SMNP</li> <li>Ves</li> <li>Ves</li> <li>Ves</li> <li>SMNP</li> <li>Ves</li> <li>Ves</li> <li>Standard and user pages</li> <li>HTTPS</li> <li>Ves: Standard and user pages</li> <li>PCV UA</li> <li>Number of connections, max.</li> <li>Number of connections, max.</li> <li>Number of elements for one call of OPC_UA_Nergescelectuation</li> <li>Number of elements for one call of OPC_UA_Nergescelectuation, max.</li> <li>Number of elements for one call of OPC_UA_Namedorescelectuation, max.</li> <li>Number of elements for one call of OPC_UA_Namedorescelectuation, max.</li> <li>Number of elements for one call of OPC_UA_Namedorescelectuation, max.</li> <li>Number of elements for one call of OPC_UA_Namedorescelectuation, max.</li> <li>Number of elements for one call of OPC_UA_Namedorescelectuation, max.</li> <li>Number of elements for one call of OPC_UA_Namedorescelectuation, max.</li> <li>Number of elements for one call of OPC_UA_Namedorescelectuation, max.</li> <li>Number of elements fo</li></ul>		
<ul> <li>S7 communication, as client</li> <li>Vers</li> <li>User data per job, max.</li> <li>See online help (S7 communication, user data size)</li> <li>Open IE communication</li> <li>TCP/IP</li> <li>Data length, max.</li> <li>Several passive connections per port, supported</li> <li>ISO-on-CPC (RFC1006)</li> <li>Data length, max.</li> <li>G4 kbyte</li> <li>UDP</li> <li>Data length, max.</li> <li>G4 kbyte</li> <li>Ves</li> <li>Stormatic control (Second Control (Secon</li></ul>	5	
• User data per job, max.         See online help (S7 communication, user data size)           Open IE communication         Yes           • 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           - Data length, max.         2 kbyte; 1 472 bytes for UDP broadcast           - UDP         Yes           - Data length, max.         2 kbyte; 1 472 bytes for UDP broadcast           - UDP multicast         Yes; Max. 5 multicast circuits           0 DHCP         Yes           • DNS         Yes           • DNS         Yes           • DRCP         Yes           • DCP         Yes           • Encryption         Yes; Standard and user pages           • HTTP         Yes; Standard and user pages           • PCPU         Yes           • HTTPS         Yes           • Application authentication         Yes           - Security policies         Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Rsa1		
Open IE communication         Yes                - Data length, max. several passive connections per port, supported         Yes                - ISO-on-TCP (RFC1006)         Yes                - Data length, max.         64 kbyte                - Data length, max.         64 kbyte                - Data length, max.         2 kbyte; 1472 bytes for UDP broadcast                - UDP multicast         Yes                DHCP         Yes                DNS         Yes                DNS         Yes                DCP         Yes                DDCP         Yes                DLDP         Yes                DCP         Yes                DCP         Yes                DCP         Yes                DCP         Yes                DCP             Yes                DCP         Yes                DCP         Yes                DCP         Yes                DCP         Yes             Standard and user pages                OPC UA             <		
• 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         • UDP multicast       Yes, Max. 5 multicast circuits         • DHCP       Yes         • DDP multicast       Yes         • DNS       Yes         • SIMMP       Yes         • DCP       Yes         • LDP       Yes         • Encryption       Yes; Standard and user pages         OPC UA       Yes, Standard and user pages         OPC UA       Yes         • Runtime license required       Yes; "Small" license required         • PScult A Clocitent       Yes         - Security policies       Available security policies: None, Basic128Rsa15, Basic256Rsa15, B		
several passive connections per port, supportedYesBata length, max.64 kbyte• UDPYesData length, max.2 kbyte; 1 472 bytes for UDP broadcastUDP multicastYes; Max. 5 multicast circuits•	· · ·	Yes
several passive connections per port, supportedYesBata length, max.64 kbyte• UDPYesData length, max.2 kbyte; 1 472 bytes for UDP broadcastUDP multicastYes; Max. 5 multicast circuits•		
• 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       Yes         • DNS       Yes         • DNS       Yes         • DNS       Yes         • DCP       Yes         • LDP       Yes         • Encryption       Yes; Optional         Web server       Yes; Standard and user pages         • HTTPS       Yes; Standard and user pages         OPC UA       Yes; Standard and user pages         • PAplication authentication       Yes; "Small" license required         • Application authentication       Yes         - Security policies       Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256         - User authentication       Yes         - Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max.       1000         OPC_UA_MendGetHandleList/OPC_UA_ReadList, max.       100         - Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, max.       1         - Number of elements for one call of OPC_UA_MedGetHandleList, max.       100	- several passive connections per port,	
Data length, max.64 kbyte• UDPYes Data length, max.2 kbyte; 1 472 bytes for UDP broadcast UDP multicastYes; Max. 5 multicast circuits• DHCPYes• DNSYes• SNMPYes• DCPYes• DCPYes• DCPYes• DCPYes• DCPYes• EncryptionYes; OptionalWeb server///////////////////////////////		Yes
• UDPYes- Data length, max.2 kbyte; 1 472 bytes for UDP broadcast UDP multicastYes; Max. 5 multicast circuits• DHCPYes• DNSYes• DNSYes• DCPYes• LLDPYes• EncryptionYes; OptionalWeb serverYes; Standard and user pages• HTTPYes; Standard and user pages• HTTPSYes; Standard and user pages• PCC UAYes• CPC UA ClientYes- Application authenticationYes; "Small" license required• OPC UA ClientYes- Security policiesAvailable security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256- User authentication"anonymous" or by user name & password- Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadListOP		64 kbyte
UDP multicastYes; Max. 5 multicast circuits• DHCPYes• DNSYes• DNSYes• SNMPYes• DCPYes• DCPYes• LLDPYes• EncryptionYes; OptionalWeb server	-	
<ul> <li>DHCP</li> <li>Ves</li> <li>DNS</li> <li>Yes</li> <li>SNMP</li> <li>Yes</li> <li>DCP</li> <li>Yes</li> <li>LDP</li> <li>Yes</li> <li>Encryption</li> <li>Yes; Optional</li> <li>Web server</li> <li>HTTP</li> <li>Yes; Standard and user pages</li> <li>OPC UA</li> <li>Runtime license required</li> <li>OPC UA</li> <li>Runtime license required</li> <li>OPC UA</li> <li>Runtine license required</li> <li>Yes; "Small" license required</li> <li>OPC UA</li> <li>Security policies</li> <li>Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256</li> <li>User authentication</li> <li>Number of connections, max.</li> <li>Number of nodes of the client interfaces, max.</li> <li>Number of nodes of the client interfaces, max.</li> <li>Number of elements for one call of OPC_UA_NoteGetHandleList/OPC_UA_ReadListC max.</li> <li>Number of elements for one call of OPC_UA_MetadGetHandleList, max.</li> <li>Number of elements for one call of OPC_UA_MetadList, OPC_UA_WiteList, OPC_UA_MetadList, CPC_UA_MetadList, OPC_UA_MetadList, OPC_UA_Metaduest and the client interfaces, max.</li> <li>Number of simultaneous calls of the client interfaces, max.</li> <li>Number of simultaneous calls of the client interfaces, max.</li> </ul>	— Data length, max.	2 kbyte; 1 472 bytes for UDP broadcast
• DNSYes• SNMPYes• DCPYes• LLDPYes• EncryptionYes; OptionalWeb server• HTTPYes; Standard and user pages• HTTPSYes; Standard and user pages• HTTPSYes; Standard and user pages• OPC UAVes• OPC UA ClientYes• Application authenticationYes- Security policiesAvailable security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256- User authentication"anonymous" or by user name & password- Number of connections, max.4- Number of elements for one call of OPC_UA_NedGetHandleList/OPC_UA_ReadList/ max.20- Number of elements for one call of OPC_UA_NetoGetHandleList, max.20- Number of elements for one call of OPC_UA_NetoGetHandleList, max.1- Number of simultaneous calls of the client Instructions per connection (except OPC_UA_NetodSetIndexList, OPC_UA_MetadList, OPC_UA_NetodSetIndexList, OPC_UA_NetodSetIndexList, OPC_UA_NetodSetIndexList, OPC_UA_MetadList, OPC_UA_NetodSetIndexList, OPC_UA_MetadList, OPC_UA_NetodSetIndexList, OPC_UA_MetadList, OPC_UA_NetodSetIndexList, OPC_UA_MetadList, OPC_UA_NetodSetIndexList, OPC_UA_NetodSetIndexList, OPC_UA_MetadList, OPC_UA_NetodSetIndexList, OPC_UA_MetadList, OPC_UA_NetodSetIndexList, OPC_UA_MetadList, OPC_U	— UDP multicast	Yes; Max. 5 multicast circuits
• SNMPYes• DCPYes• LLDPYes• LLDPYes• EncryptionYes; OptionalWebserver-• HTTPYes; Standard and user pages• HTTPSYes; Standard and user pages• HTTPSYes; Standard and user pages• PC UAVes; Standard and user pages• PC UAYes; "Small" license required• OPC UA ClientYes• Application authenticationYes- Security policiesAvailable security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Rsa256- User authenticationYes- Number of connections, max.4- Number of nodes of the client interfaces, max.1 000- Number of elements for one call of OPC_UA_NedGetHandleList/OPC_UA_ReadList/ max.20- Number of elements for one call of OPC_UA_MemeSpaceGetHandkeList, max.100- Number of elements for one call of OPC_UA_MethodGetHandleList, max.1- Number of elements for one call of OPC_UA_MethodGetHandleList, max.1- Number of elements for one call of OPC_UA_MethodGetHandleList, max.1- Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_WriteList, OPC_UA_MethodE max.1	• DHCP	Yes
<ul> <li>DCP Yes</li> <li>LLDP Yes</li> <li>Encryption Yes; Optional</li> <li>Web server</li> <li>HTTP Yes; Standard and user pages</li> <li>HTTPS Yes; Standard and user pages</li> <li>OPC UA</li> <li>Runtime license required Yes; "Small" license required</li> <li>OPC UA Client Yes</li> <li>Application authentication Yes</li> <li>Security policies Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256</li> <li>User authentication "anonymous" or by user name &amp; password</li> <li>Number of nodes of the client interfaces, max.</li> <li>Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C max.</li> <li>Number of elements for one call of OPC_UA_Memory calls of the client instructions per connection (except OPC_UA_WriteList, OPC_UA_MitteList, OP</li></ul>	• DNS	Yes
• LLDPYes• EncryptionYes; OptionalWeb server-• HTTPYes; Standard and user pages• HTTPSYes; Standard and user pages• HTTPSYes; Standard and user pages• DPC UA-• Runtime license requiredYes; "Small" license required• OPC UA ClientYes- Application authenticationYes- Security policiesAvailable security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Rs		Yes
• Encryption       Yes; Optional         Web server       •         • HTTP       Yes; Standard and user pages         • HTTPS       Yes; Standard and user pages         OPC UA       •         • Runtime license required       Yes; "Small" 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.       4         - Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C max.       300         - Number of elements for one call of OPC_UA_MetodGetHandleList, max.       100         - Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_MetodGetHandleList, max.       100         - Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_MetodGetHandleList, max.       1         - Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_ReadList, OPC_UA_NetodetHandleList, max.       1         - Number of simultaneous calls of the client       1         - Number of simultaneous calls of the client       1         - Number of simultaneous calls of the		
Web server         • HTTP       Yes; Standard and user pages         • HTTPS       Yes; Standard and user pages         OPC UA       Yes; Standard and user pages         • Runtime license required       Yes; "Small" 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.       4         - Number of elements for one call of       300         OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C       300         - Number of elements for one call of       20         OPC_UA_MameSpaceGetIndexList, max.       100         - Number of simultaneous calls of the client instructions per connection (except OPC_UA_MeadList, OPC_UA_MeadList, OPC_UA_MeadList, OPC_UA_MiteList, OPC_UA_Mit		
• HTTP       Yes; Standard and user pages         • HTTPS       Yes; Standard and user pages         OPC UA       • Runtime license required         • Runtime license required       Yes; "Small" 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.       4         - Number of nodes of the client interfaces, max.       1 000         - Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/OR       300         OPC_UA_MethodGetHandleList, max.       100         - Number of elements for one call of OPC_UA_MethodGetHandleList, max.       100         - Number of simultaneous calls of the client instructions per connection (except OPC_UA_MethodGetHandleList, OPC_UA_M       1         - Number of simultaneous calls of the client       1         - Number of simultaneous calls of the client       1		Yes; Optional
• HTTPS       Yes; Standard and user pages         OPC UA         • Runtime license required       Yes; "Small" 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.       4         - Number of nodes of the client interfaces, max.       1000         - Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/ORA_MARSpaceGetIndexList, max.       20         - Number of elements for one call of OPC_UA_NethodGetHandleList, max.       100         - Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_MethodGetHandleList, OPC_UA_M       11         - Number of simultaneous calls of the client instructions per connection (except OPC_UA_MethodGetHandleList, OPC_UA_M       1         - Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_MethodGetHandleList, OPC_UA_M       1		Vac Chandard and user no
OPC UA         • Runtime license required         • OPC UA Client         - Application authentication         - Security policies         - User authentication         - Number of connections, max.         - Number of nodes of the client interfaces, max.         - Number of elements for one call of         OPC_UA_NameSpaceGetIndexList, max.         - Number of elements for one call of         OPC_UA_MethodGetHandleList, max.         - Number of simultaneous calls of the client instructions per connection (except         OPC_UA_MethodGetHandleList, OPC_UA_M         - Number of simultaneous calls of the client         0PC_UA_ReadList, OPC_UA_WriteList, OPC_UA_M         max.         - Number of simultaneous calls of the client         1         instructions per connection (except         OPC_UA_ReadList, OPC_UA_WriteList, OPC_UA_M         Max.         - Number of simultaneous calls of the client         1		
• Runtime license required       Yes; "Small" 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.       4         - Number of nodes of the client interfaces, max.       1 000         - Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C max.       300         - Number of elements for one call of OPC_UA_MethodGetHandleList, max.       20         - Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_ReadList, OPC_UA_ReadList, OPC_UA_WriteList, OPC_UA_M       1         - Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_WriteList, OPC_UA_M       1		
<ul> <li>OPC UA Client</li> <li>Application authentication</li> <li>Security policies</li> <li>Security policies</li> <li>Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256</li> <li>User authentication</li> <li>Number of connections, max.</li> <li>Number of nodes of the client interfaces, max.</li> <li>Number of elements for one call of</li> <li>OPC_UA_NodeGetHandleList/OPC_UA_ReadList/CPC_UA_ReadList/CPC_UA_ReadList, max.</li> <li>Number of elements for one call of</li> <li>OPC_UA_MethodGetHandleList, max.</li> <li>Number of simultaneous calls of the client instructions per connection (except</li> <li>OPC_UA_ReadList, OPC_UA_WriteList, OPC_UA_M</li> <li>Number of simultaneous calls of the client</li> <li>Satistication of simultaneous calls of the client</li> <li>Number of simultaneous calls of the client</li> </ul>		Ves: "Small" license required
- Application authenticationYes- Security policiesAvailable 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, max.1000- Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/ 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 per connection (except OPC_UA_ReadList,OPC_UA_M max.100- Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList,OPC_UA_M max.5		
Basic256Sha256 User authentication"anonymous" or by user name & password Number of connections, max.4 Number of nodes of the client interfaces, max.1 000 Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C 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 per connection (except OPC_UA_ReadList, OPC_UA_WriteList, OPC_UA_M max.1 Number of simultaneous calls of the client max.1 Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_WriteList, OPC_UA_M max.1		
Number of connections, max.4 Number of nodes of the client interfaces, max.1 000 Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C 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 elements for one call of OPC_UA_MethodGetHandleList, max.100 Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_M max.1 Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_M max.1 Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_M5		
Number of nodes of the client interfaces, max.1 000 Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C 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 elements for one call of OPC_UA_MethodGetHandleList, max.100 Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_WriteList, OPC_UA_M max.1 Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList, OPC_UA_WriteList, OPC_UA_M max.5	— User authentication	"anonymous" or by user name & password
Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C 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 per connection (except OPC_UA_ReadList,OPC_UA_M max.1 Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList,OPC_UA_M max.5	- Number of connections, max.	4
OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C         max.         - Number of elements for one call of         OPC_UA_NameSpaceGetIndexList, max.         - Number of elements for one call of         OPC_UA_MethodGetHandleList, max.         - Number of simultaneous calls of the client         instructions per connection (except         OPC_UA_ReadList,OPC_UA_WriteList,OPC_UA_M         max.         - Number of simultaneous calls of the client         instructions per connection (except         OPC_UA_ReadList,OPC_UA_WriteList,OPC_UA_M         max.         - Number of simultaneous calls of the client         5	<ul> <li>Number of nodes of the client interfaces, max.</li> </ul>	1 000
OPC_UA_NameSpaceGetIndexList, max.       100         - Number of elements for one call of       100         OPC_UA_MethodGetHandleList, max.       1         - Number of simultaneous calls of the client       1         instructions per connection (except       1         OPC_UA_ReadList,OPC_UA_WriteList,OPC_UA_M       1         max.       5	OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C	300
OPC_UA_MethodGetHandleList, max.       1         — Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList,OPC_UA_WriteList,OPC_UA_M max.       1         — Number of simultaneous calls of the client       5		20
instructions per connection (except OPC_UA_ReadList,OPC_UA_WriteList,OPC_UA_M max. — Number of simultaneous calls of the client 5		100
	instructions per connection (except OPC_UA_ReadList,OPC_UA_WriteList,OPC_UA_M	1
		5

OPC_UA_ReadList,OPC_UA_WriteList and	
OPC_UA_MethodCall, max.	
<ul> <li>Number of registerable nodes, max.</li> </ul>	5 000
<ul> <li>— Number of registerable method calls of OPC_UA_MethodCall, max.</li> </ul>	100
<ul> <li>— Number of inputs/outputs when calling OPC_UA_MethodCall, max.</li> </ul>	20
OPC UA Server	Yes; Data access (read, write, subscribe), method call, custom address space
<ul> <li>Application authentication</li> </ul>	Yes
— Security policies	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
— User authentication	"anonymous" or by user name & password
<ul> <li>— GDS support (certificate management)</li> </ul>	Yes
<ul> <li>— Number of sessions, max.</li> </ul>	32
<ul> <li>Number of accessible variables, max.</li> </ul>	50 000
<ul> <li>Number of registerable nodes, max.</li> </ul>	10 000
<ul> <li>— Number of subscriptions per session, max.</li> </ul>	20
— Sampling interval, min.	100 ms
— Publishing interval, min.	500 ms
<ul> <li>— Number of server methods, max.</li> </ul>	20
<ul> <li>— Number of inputs/outputs per server method, max.</li> </ul>	20
— Number of monitored items, max.	1 000; 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"
<ul> <li>— Number of nodes for user-defined server interfaces, max.</li> </ul>	1 000
<ul> <li>Alarms and Conditions</li> </ul>	Yes
<ul> <li>— Number of program alarms</li> </ul>	100
<ul> <li>— Number of alarms for system diagnostics</li> </ul>	50
Further protocols	
MODBUS	Yes; MODBUS TCP
Isochronous mode	
Equidistance	Yes
S7 message functions	
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	
<ul> <li>Number of program alarms</li> </ul>	600
<ul> <li>Number of alarms for system diagnostics</li> </ul>	100
<ul> <li>Number of alarms for motion technology objects</li> </ul>	80
Test commissioning functions	
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
Status/control	
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
Forcing	
Forcing	Yes
<ul><li>Forcing</li><li>Forcing, variables</li></ul>	Yes Peripheral inputs/outputs
0	
• Forcing, variables	Peripheral inputs/outputs

Number of entries, max.	1 000
- of which powerfail-proof	500
Traces	500
Number of configurable Traces	4: Up to 512 KB of data per trace are possible
	+, op to 312 hb of data per trace are possible
Interrupts/diagnostics/status information	
Diagnostics indication LED	Ver
RUN/STOP LED	Yes
• ERROR LED	Yes
	Yes
STOP ACTIVE LED	Yes
Connection display LINK TX/RX	Yes
Supported technology objects	
Motion Control	Yes; Note: The number of technology objects affects the cycle time of the PLC program; selection guide via the TIA Selection Tool
<ul> <li>Number of available Motion Control resources for technology objects</li> </ul>	800
<ul> <li>Required Motion Control resources</li> </ul>	
— 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
<ul> <li>Positioning axis</li> </ul>	
<ul> <li>— Number of positioning axes at motion control cycle of 4 ms (typical value)</li> </ul>	5
<ul> <li>— Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul>	10
Controller	
<ul> <li>PID_Compact</li> </ul>	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	
<ul> <li>High-speed counter</li> </ul>	Yes
Ambient conditions	
Ambient temperature during operation	
<ul> <li>horizontal installation, min.</li> </ul>	-25 °C; No condensation
<ul> <li>horizontal installation, max.</li> </ul>	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off
<ul> <li>vertical installation, min.</li> </ul>	-25 °C; No condensation
<ul> <li>vertical installation, max.</li> </ul>	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	
<ul> <li>Installation altitude above sea level, max.</li> </ul>	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
— GRAPH	Yes
Know-how protection	
<ul> <li>User program protection/password protection</li> </ul>	Yes
Copy protection	Yes
Block protection	Yes
Access protection	

<ul> <li>protection of confidential configuration data</li> </ul>	Yes
<ul> <li>Password for display</li> </ul>	Yes
<ul> <li>Protection level: Write protection</li> </ul>	Yes
<ul> <li>Protection level: Read/write protection</li> </ul>	Yes
<ul> <li>Protection level: Complete protection</li> </ul>	Yes
programming / cycle time monitoring / header	
lower limit	adjustable minimum cycle time
• upper limit	adjustable maximum cycle time
Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	405 g
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