## **SIEMENS**

## **Data sheet**

6ES7511-1TL03-0AB0



SIMATIC S7-1500T, CPU 1511T-1 PN, central processing unit with work memory 450 KB for program and 1.5 MB for data, 1st interface: PROFINET IRT with 2-port switch, 25 ns bit performance, SIMATIC Memory Card required \* \*\*\* approvals and certificates according to entry 109816881 at support.industry.siemens.com to be observed! \*\*\*\*

Figure similar

CPU 1511T-1 PN
FS01
V3.0
Yes
Yes; I&M0 to I&M3
Yes; Distributed and central; with minimum OB $6x$ cycle of $500~\mu s$ (distributed) and $1~ms$ (central)
Yes
3.45 cm
8
2
24 V
19.2 V
28.8 V
Yes
5 ms
1/s
0.73 A
0.94 A
1.15 A; Rated value
0.5 A <sup>2</sup> ·s
10 W
5.5 W
7.5 W
1
Yes

<ul><li>integrated (for data)</li></ul>	1.5 Mbyte
Load memory	
Plug-in (SIMATIC Memory Card), max.	32 Gbyte
Backup	,\-
maintenance-free	Yes
CPU processing times	
	25 ns
for bit operations, typ. for word operations, typ.	32 ns
	42 ns
for fixed point arithmetic, typ.	170 ns
for floating point arithmetic, typ.	170 lis
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.	1.5 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	
Number range	0 65 535
• Size, max.	450 kbyte
FC	
Number range	0 65 535
• Size, max.	450 kbyte
OB	
• Size, max.	450 kbyte
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 technology synchronous alarm OBs	2
Number of startup OBs	100
Number of asynchronous error OBs	4
Number of synchronous error OBs	2
Number of diagnostic alarm OBs	1
Nesting depth	•
per priority class	24
	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.	256 kbyte; in total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 216 KB
Extended retentive data area (incl. timers, counters, flags),	1.5 Mbyte; When using PS 6 0W 24/48/60 V DC HF
max.	
Flag	
• Size, max.	16 kbyte
Number of clock memories	8; 8 clock memory bit, grouped into one clock memory byte

Data blocks	
Retentivity adjustable	Yes
Retentivity adjustable     Retentivity preset	No
Local data	
• per priority class, max.	64 kbyte; max. 16 KB per block
Address area	
Number of IO modules	2 048; 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	
Number of subprocess images, max.	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	
• integrated	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	
Type     Packup time	Hardware clock
Backup time     Deviction par day, may	6 wk; At 40 °C ambient temperature, typically
Deviation per day, max.  Operating hours counter.	10 s; Typ.: 2 s
Operating hours counter  • Number	16
Clock synchronization	10
• 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
integrated switch	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	
<ul> <li>PG/OP communication</li> </ul>	Yes
<ul> <li>Isochronous mode</li> </ul>	Yes
Direct data exchange	Yes; Requirement: IRT and isochronous mode (MRPD optional)
— IRT	Yes
— PROFlenergy	Yes; per user program
<ul> <li>Prioritized startup</li> </ul>	Yes; Max. 32 PROFINET devices
<ul> <li>Number of connectable IO Devices, max.</li> </ul>	128; In total, up to 512 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET
<ul> <li>Of which IO devices with IRT, max.</li> </ul>	64
<ul> <li>Number of connectable IO Devices for RT, max.</li> </ul>	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
— Opualing limes	share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data
Update time for IRT	
— for send cycle of 250 μs	250 µs to 4 ms; Note: In the case of IRT with isochronous mode, the
— for send cycle of 500 μs	minimum update time of 500 µs of the isochronous OB is decisive 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
<ul> <li>With IRT and parameterization of "odd" send</li> </ul>	Update time = set "odd" send clock (any multiple of 125 μs: 375 μs, 625
cycles	μs 3 875 μs)
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	
— PG/OP communication	Yes
— Isochronous mode	No
— IRT	Yes
— PROFlenergy	Yes; per user program
Shared device	Yes
<ul> <li>Number of IO Controllers with shared device,</li> </ul>	4
max.  — activation/deactivation of I-devices	Veet nor user program
	Yes; per user program
Asset management record	Yes; per user program
Interface types	
RJ 45 (Ethernet)	
• 100 Mbps	Yes
<ul> <li>Autonegotiation</li> </ul>	Yes
<ul> <li>Autocrossing</li> </ul>	Yes
<ul> <li>Industrial Ethernet status LED</li> </ul>	Yes
Protocols	
PROFIsafe	No
Number of connections	
Number of connections, max.	128; via integrated interfaces of the CPU and connected CPs / CMs
Number of connections, max.     Number of connections reserved for ES/HMI/web	10
	88
Number of C7 routing paths	
Number of S7 routing paths  Deduction of S7 routing paths	16
Redundancy mode	V
H-Sync forwarding	Yes
Media redundancy	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Media redundancy	only via 1st interface (X1)
— MRP	Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client

Switchover fine on line break, typ Number of stations in the ring, max.  FGUP communication FGY routing FGY communication as server FGY c	<ul> <li>MRP interconnection, supported</li> </ul>	Yes; as MRP ring node according to IEC 62439-2 Edition 3.0
Number of stations in the ring, max.    PGOP communication   Yes   Yes   Post record routing   Yes	— MRPD	Yes; Requirement: IRT
Number of stations in the ring, max.    PGOP communication   Yes   Yes   Post record routing   Yes	<ul> <li>Switchover time on line break, typ.</li> </ul>	200 ms; For MRP, bumpless for MRPD
PROOP communication STrouting Page Bala record routing Page STroommunication, as elever STroommunication Page Stroommunication Page Stroommunication, as elever STroommunication, as elever STroommunication Stroommunication Stroommunication Stroommunication Stroommunication, user data size)  Page Stroommunication  Stroommunication, user data size)  Page Stroommunication, user data size)  Page Stroommunication  Stroommunication  Page Stro		
Solution For communication, as server For communication, as server For communication, as server For communication, as server For communication For communic	SIMATIC communication	
Palar accord routing     S communication, as server     S 7 communication, as client     Ses on the server     Server of the server of th	PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
Solvent data per job, max.  User data per job, max.  See online help (S7 communication, user data size)  Open it communication  TCP/IP  Data length, max.  See online help (S7 communication, user data size)  Open it communication  See online help (S7 communication, user data size)  Open it communication  See online help (S7 communication, user data size)  Open it communication  See online help (S7 communication, user data size)  Open it communication  See online help (S7 communication, user data size)  Open it communication  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication, user data size)  Open it communication  Yes  See online help (S7 communication user gates)  Yes  See online help (S7 compunication user gates)  Yes  Yes  See online help (S7 compunication user gates)  Yes  Yes  See online help (S7 compunication user gates)  Ye	S7 routing	Yes
See online help (\$7 communication, user data size)  Open IE communication  **CPCHP**  Data length, max.  - several passive connections per port, supported  IsOs-on-TCP (RFC1006)  - Data length, max.  - UDP  Data length, max.  - UDP  Data length, max.  - UDP multicast  **ONICP**  **NIMP**  **DOCP**  **ONIS**  **SNMP**  **DOCP**  **ITTP**  **ITTP**  **ITTP**  **DOCP**  **ITTP**  **ITTP**  **Pes: Standard and user pages  **ITTP**  **Pes: Standard and user pages  **ITTP**  **Pes: Standard and user pages  **P	<ul> <li>Data record routing</li> </ul>	Yes
● User data per job, max.  ○ PCPIP  - Data length, max several passive connections per port, supported - (SCO-nT-ICP (RFC1006)) - Data length, max UDP multicast - UDP multicast - (UDP multicast circuits - (Ves max. 78 mu	<ul> <li>S7 communication, as server</li> </ul>	Yes
Open LE communication  • TCPIP  — Data length, max. — several passive connections per port, supported  • ISC-on-TCP (RFC1008) — Data length, max. — UDP — Data length, max. — UDP multicast — Ves • SNMP • DCP • INDS • SNMP • DCP • INDP • Encryption  Web server • HTTP • HTTP • HTTP • HTTP • HTTP • Yes; Standard and user pages  Ye	<ul> <li>S7 communication, as client</li> </ul>	Yes
TCP/IP  Data length, max. — several passive connections per port, supported  SCO-n-TCP (RFC1008) — Data length, max. — UDP  Data length, max. — UDP multicast  OHCP — Data length, max. — UDP multicast  OHCP — Data length, max. — UDP multicast  OHCP — Yes  SMMP — Yes  SMMP — Yes  SMMP — Yes  - COPC — Yes  - LLIDP — Percent of the connection of the client instructions for session management, per connection, max. — Number of simultaneous calls of the client instructions for session management, per connection, max. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client instructions for session management, per connection, from x. — Number of simultaneous calls of the client	<ul> <li>User data per job, max.</li> </ul>	See online help (S7 communication, user data size)
Data length, max several passive connections per port, supported  ISC-on-TCP (RFC1006) Data length, max UDP Data length, max UDP multicast Ves SNMP Ves SNMP Ves SNMP Ves SNMP DCP Encryption Ves Encryption Ves Encryption Ves Encryption Ves	Open IE communication	
	• TCP/IP	Yes
supported  ISO-On-TOP (RRC1006)  Data length, max.  UDP  Data length, max.  Defended and the length of the length	<ul><li>— Data length, max.</li></ul>	64 kbyte
ISO-on-TCP (RRC106)     Data length, max.     UDP     Data length, max.     UDP multicast     Purp mult	<ul> <li>several passive connections per port,</li> </ul>	Yes
- Data length, max UDP - Data length, max UDP multicast - Ves; max. 78 multicast circuits - Ves - SMMP - Ves - SMMP - Ves - SMMP - DCP - ULDP - Ves - Encryption - Ves; Optional - Ves; Standard and user pages - Ves; Ves; Data Access (rejettered Read/Write), Method Call Ves; Data Access (Read, Write, Subscribe), Method Call Ves; Data Access	supported	
- UDP - Data length, max UDP multicast - Ves; max. 78 multicast circuits - Ves - DNS - SMMP - DCP - Ves - Encryption - Ves - Encryption - Ves - Encryption - Ves - ULDP - Ves - Encryption - Ves - ULDP - Ves - Ves; Optional - Ves; Standard and user pages - Ves; Data Access (registered Read/Write), Method Call - Ves; Data Access (registered Read/Write), Method Call - Ves - Ves, Data Access (registered Read/Write), Method Call - Ves - Number of elements for one call of - OPC_UA_Node/GetHandleList/OPC_UA_ReadList/C max Number of simultaneous calls of the client - Instructions for session management, per - Connection, max Number of simultaneous calls of the client - Instructions for data access, per connection, max Number of simultaneous calls of the client - Instructions for data access, per connection, max Number of simultaneous calls of the client - Instructions for data access, per connection, max Number of instructions for data access, per connection, max Number of instructions for data access, per connection, max Number of instructions for data access, per connection, max Number of instructions for data access, per connection, max Number of simultaneous ca	<ul><li>ISO-on-TCP (RFC1006)</li></ul>	Yes
- Data length, max UDP multicast - DPCP - DNS - SNMP - DCP - Encryption  Web server - HTTP - HTTP - HTTP - HTTP - Required - OPC UA Client - Application authentication - Number of elements for one call of OPC, UA, NameSpaceSetIndeut ist, max Number of simultaneous calls of the client instructions for data access, per connection, max Number of simultaneous calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Calls, max Number of registerable method calls of OPC, UA, Method Calls, max Number of registerable method calls of OPC, UA, Method Calls, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of registerable method calls of OPC, UA, Method Call, max Number of secsible veriables, m	<ul><li>— Data length, max.</li></ul>	64 kbyte
□ UPP multicast     ○ DHCP     ○ DNS     ○ SNMP     ○ SNMP     ○ DCP     ○ LLDP     ○ LLDP     ○ Encryption  Web server     ○ HTTP     ○ PC UA     ○ Runtime license required     ○ OPC UA Client     ○ Application authentication     ○ Security policies     ○ Number of elements for one call of OPC UA, Node Self-Handle List/OPC_UA, ReadList/O max.     ○ Number of elements for one call of OPC_UA, Node Self-Handle List/OPC_UA, ReadList/O max.     ○ Number of elements for one call of OPC_UA, Node Self-Handle List, max.     ○ Number of simultaneous calls of the client instructions for session management, per connection, max.     ○ Number of eligible read and calls of OPC_UA, Method-Call, max.     ○ Number of eligible read and calls of OPC_UA, Method-Call, max.     ○ Number of eligible read and calls of OPC_UA, Method-Call, max.     ○ Number of eligible read and calls of OPC_UA, Method-Call, max.     ○ Number of eligible read and calls of OPC_UA, Method-Call, max.     ○ OPC UA Server      ○ Application authentication     ○ Security policies     ○ Security policies     ○ Application authentication     ○ Security policies     ○ Security policies     ○ Application authentication     ○ GDS support (certificate management)     ○ Number of sessions, max.     ○ OPC UA Server     ○ Application authentication     ○ GDS support (certificate management)     ○ Number of sessions, max.     ○ OPC UA Server     ○ OPC UA S		
DHCP     DNS     NNMP     NNMP     DCP     LLDP     Encryption  Web server      HTTTP     HTTP     HTTP     HTTP     TYes: Standard and user pages  HTTP     PCUA Client      Runtime license required     OPC UA Client     — Application authentication     — Security policies     — User authentication     — Number of connections, max.     — Number of nodes of the client interfaces, recommended max.     — Number of elements for one call of OPC_UA, NameSpaceGetIndexList, max.     — Number of simultaneous calls of the client instructions for data access, per connection, max.     — Number of simultaneous calls of the client instructions for data access, per connection, max.     — Number of registerable motiod calls of OPC_UA, MethodGetHandleList, max.     — Number of elements for one call of OPC_UA, MethodGetHandleList, max.     — Number of simultaneous calls of the client instructions for data access, per connection, max.     — Number of registerable method calls of OPC_UA, MethodGetJanduptus when calling OPC_UA, MethodGetJanduptus	— Data length, max.	
NS     SNMP     SNMP     DCP     Ves     DCP     LLDP     Encryption  Web server      HTTP     Yes; Standard and user pages     HTTPS     Yes; Standard and user pages     Percent of the standard and user pages  PHTTPS     Yes; Standard and user pages  PEC UA     Runtime license required     OPC UA Client     — Application authentication     — Security policies     — User authentication     — Number of connections, max.     — Number of connections, max.     — Number of lements for one call of OPC_UA, Node-Get-HandleList/OPC_UA_ReadList/C max.     — Number of elements for one call of OPC_UA, MemodeGetHandleList, max.     — Number of elements for one call of OPC_UA, MemodeGetHandleList, max.     — Number of simultaneous calls of the client instructions for seasion management, per connection, max.     — Number of registerable method calls of OPC_UA, MethodCall, max.     — Number of registerable method calls of OPC_UA, MethodCall, max.     — Number of pregisterable method calls of OPC_UA, MethodCall, max.     — Number of pregisterable method calls of OPC_UA, MethodCall, max.     — Number of pregisterable method calls of OPC_UA, MethodCall, max.     — Number of pregisterable method calls of OPC_UA, MethodCall, max.     — Number of pregisterable method calls of OPC_UA, MethodCall, max.     — Number of pregisterable method calls of OPC_UA, MethodCall, max.     — Number of pregisterable method calls of OPC_UA, MethodCall, max.     — Number of pregisterable method calls of OPC_UA, MethodCall, max.     — Number of pregisterable method calls of OPC_UA, MethodCall, max.     — Number of sessions, max.     — Security policies     — User authentication     — GDS support (certificate management)     — Number of sessions, max.     — Security policies: None, Basic128Rsa15, Basic256R		
SNMP DCP LLDP Encryption  Web server  HTTP HTTP HTTP OPC UA  Runtime license required OPC UA Client  — Application authentication — Number of feejsterable method calls of OPC_UA_MethodCall, max. — Number of feejsterable method calls of OPC_UA_MethodCall, max. — Number of feejsterable mades, max. — Number of registerable nodes, max. — Number of elements for one call of OPC_UA_MethodCall+six max. — Number of registerable nodes, max. — Number of elements for one call of OPC_UA_MethodCall-six max. — Number of elements for one call of OPC_UA_MethodCall-six max. — Number of elements for one call of OPC_UA_MethodCall-six max. — Number of registerable nodes, max. — Number of simultaneous calls of the client instructions for session management, per connection, max. — Number of fegisterable method calls of OPC_UA_MethodCall, max. — Number of fegisterable method calls of OPC_UA_MethodCall, max.  OPC UA Server  — Application authentication — Security policies  — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — User authentication — Security policies — Ves; Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space  Yes; Data Access (Read, Write,	• DHCP	
DCP LLDP Encryption Yes Forcyption Yes; Optional  Web server HTTP HTTPS Yes; Standard and user pages Yes; Standard and user pages  PCUA Runtime license required OPC UA Client Application authentication Security policies  User authentication Number of connections, max. Number of elements for one call of OPC_UA, NodeGetHandleList/OPC_UA_ReadList/Cmax. Number of elements for one call of OPC_UA, NodeGetHandleList/OPC_UA_ReadList/Cmax. Number of elements for one call of OPC_UA, MendeGetHandleList/OPC_UA_ReadList/Cmax. Number of elements for one call of OPC_UA, MendeGetHandleList, max. Number of elements for one call of OPC_UA, MendeGetHandleList, max. Number of elements for one call of OPC_UA, MendeGetHandleList/Opc_UA, MendeGetHandleList/Opc_U	• DNS	Yes
Encryption  Yes: Standard and user pages  Yes: Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space  Yes: Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space  Yes: Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space  Yes: Data Access (Read, Write, Subscribe), Method Call,	• SNMP	Yes
Encryption  Web server  HTTP HTTP HTTP HTTP HTTP HTTP HTTP HT		Yes
HTTP     HTTPS     HTTPS     Yes; Standard and user pages     POP UA      Runtime license required     OPC UA Client     — Application authentication     — Security policies     — Security policies     — User authentication     — Number of connections, max.     — Number of connections, max.     — Number of of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C max.     — Number of elements for one call of OPC_UA_NetfandleList, max.     — Number of elements for one call of OPC_UA_NetfandleList, max.     — Number of elements for one call of OPC_UA_NetfandleList, max.     — Number of registerable nodes, finax.     — Number of fimultaneous calls of the client instructions for session management, per connection, max.     — Number of fregisterable nodes, max.     — Number of registerable method calls of OPC_UA_MethodCall, max.     — Number of registerable method calls of OPC_UA_MethodCall, max.     — Number of inputs/outputs when calling OPC_UA_MethodCall, max.     — Application authentication     — Security policies     — User authentication     — Security policies     — User authentication     — GDS support (certificate management)     — Number of sessions, max.     — Auther of sessions max.     — Auther of sessions max.     — Application authentication     — Security policies     — User authentication     — GDS support (certificate management)     — Number of sessions, max.	• LLDP	Yes
● HTTP ● HTTPS ● HTTPS  OPC UA  ● Runtime license required ● OPC UA Client  — Application authentication — Security policies — User authentication — Number of connections, max. — Number of lements for one call of OPC_UA_NededetHandleList/OPC_UA_ReadList/C max. — Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max. — Number of simultaneous calls of the client instructions for data access, per connection, max. — Number of registerable method calls of OPC_UA_MethodCall, max. — Number of registerable method calls of OPC_UA_MethodCall, max. — Number of registerable method calls of OPC_UA_MethodCall, max. — Number of registerable method calls of OPC_UA_MethodCall, max. — Number of registerable method calls of OPC_UA_MethodCall, max. — Number of inputs/outputs when calling OPC_UA_MethodCall, max. — Application authentication — Security policies — User authentication — GDS support (certificate management) — Number of sessions, max. — Number of sessions, max. — Number of sessions, max. — Sumber of sessions, max. — User authentication — Security policies — User authentication — Runtber of sessions, max. — Number of accessible variables, max. — Sumber of accessible variables, max. — Standard and user pages sum and user pages were required — Yes; Sata Access (registered Read/Write), Method Call — Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space — Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space — Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space — Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space — Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space — Ye	Encryption	Yes; Optional
HTTPS     Pautitime license required     OPC UA Client     Application authentication     Security policies     Security policies     Security policies     Security policies     Security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256     Security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Basic256Sha256, Basic256Sha256, Basic256SRsa15, Basic256Sha256, Basic256Sha256, Basic256Sha256, Basic256SRsa15, Basic256Sha256, Basic256Sha256Rsa0aep, Aes256Sha256RsaPss anonymous" or by user name & password  Yes: Data Access (registered Read/Write), Method Call Yes: Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space  Yes: Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space  Yes: Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space  Yes: Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space  Yes: Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space  Yes: Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space  Yes: Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space  Yes: Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom A		
● Runtime license required  ● OPC UA Client  — Application authentication — Security policies — User authentication — Number of connections, max. — Number of nodes of the client interfaces, recommended max. — Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C max. — Number of elements for one call of OPC_UA_MameSpaceGetIndexList, max. — Number of simultaneous calls of the client instructions for session management, per connection, max. — Number of registerable method calls of OPC_UA_MethodCall, max. — Number of rot data access, per connection, max. — Number of rot data access, per connection, max. — Number of rot data access, per connection, max. — Number of rot data access, per connection, max. — Number of rot data access, per connection, max. — Number of rot data access, per connection, max. — Number of rot data access, per connection, max. — Number of rotale access, per connection, max. — Number of sigisterable method calls of OPC_UA_MethodCall, max. — Number of inputs/outputs when calling OPC_UA_MethodCall, max. — Application authentication — Security policies — User authentication — GDS support (certificate management) — Number of sessions, max — Number of accessible variables, max.  — Number of accessible variables, available access (Read, Write, Subscribe), Method Call, Alarms & Conditi		. •
<ul> <li>Runtime license required</li> <li>OPC UA Client</li> <li>— Application authentication</li> <li>— Security policies</li> <li>— User authentication</li> <li>— Number of connections, max.</li> <li>— Number of nodes of the client interfaces, recommended 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_MethodGetHandleList, max.</li> <li>— Number of elements for one call of OPC_UA_MethodGetHandleList, max.</li> <li>— Number of elements for one call of OPC_UA_MethodGetHandleList, max.</li> <li>— Number of elements for one call of OPC_UA_MethodGetHandleList, max.</li> <li>— Number of elements for one call of OPC_UA_MethodGetHandleList, max.</li> <li>— Number of elements for one call of OPC_UA_MethodGetHandleList, max.</li> <li>— Number of registerable nodes, max.</li> <li>— Number of registerable method calls of OPC_UA_MethodCall, max.</li> <li>— Number of registerable method calls of OPC_UA_MethodCall, max.</li> <li>— Number of inputs/outputs when calling OPC_UA_MethodCall, max.</li> <li>— OPC UA Server</li> <li>— Application authentication</li> <li>— Security policies</li> <li>— User authentication</li> <li>— ODS support (certificate management)</li> <li>— Number of accessible variables, max.</li> <li>— Number of accessible variables, max.</li> <li>— Number of accessible variables, max.</li> <li>50000</li> </ul>		Yes; Standard and user pages
OPC UA Client     — Application authentication     — Security policies     — User authentication     — Number of connections, max.     — Number of lements for one call of OPC_UA_NameSpaceGetIndexList, max.     — Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max.     — Number of simultaneous calls of the client instructions for session management, per connection, max.     — Number of registerable nodes, max.     — Number of registerable mathod calls of OPC_UA_MethodCall, max.     — Number of registerable mathod calls of OPC_UA_MethodCall, max.     — Number of registerable mathod calls of OPC_UA_MethodCall, max.     — Number of registerable mathod calls of OPC_UA_MethodCall, max.     — Number of registerable mathod calls of OPC_UA_MethodCall, max.     — Number of registerable mathod calls of OPC_UA_MethodCall, max.     — Number of inputs/outputs when calling OPC_UA_MethodCall, max.     — OPC UA Server     — Application authentication     — Security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Rsa15, Basic256Rsa256, Res128Sha256Rsa0aep, Aes256Sha256RsaPss     "anonymous" or by user name & password		
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- Security policies  - User authentication - Number of connections, max Number of odes of the client interfaces, recommended max Number of elements for one call of 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 semultaneous calls of the client instructions for session management, per connection, max Number of registerable nodes, max Number of registerable method calls of OPC_UA_MethodCall, max Number of inputs/outputs when calling OPC_UA_MethodCall, max Number of inputs/outputs when calling OPC_UA_MethodCall, max OPC UA Server - Application authentication - Security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss "anonymous" or by user name & password  4 1000  300  20  300  50  100  50  100  50  100  70  70  70  70  70  70  70  70		, <del>-</del>
Basic256Sha256  - User authentication - Number of connections, max Number of nodes of the client interfaces, recommended max Number of elements for one call of 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 for session management, per connection, max Number of registerable nodes, max Number of registerable nethod calls of OPC_UA_MethodCall, max Number of inputs/outputs when calling OPC_UA_MethodCall, max Number of inputs/outputs when calling OPC_UA_MethodCall, max Number of inputs/outputs when calling OPC_UA_MethodCall, max Application authentication - Security policies - User authentication - GDS support (certificate management) - Number of sessions, max Number of sessions, max Number of sessions, max User authentication - Security policies available security policies: None, Basic128Rsa15, Basic256RsaPss "anonymous" or by user name & password - Yes - Number of sessions, max Number of sessions, max.		
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Number of nodes of the client interfaces, recommended max.  Number of elements for one call of 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 for session management, per connection, max.  Number of figuitareous calls of the client instructions for data access, per connection, max.  Number of registerable method calls of OPC_UA_MethodCall, max.  Number of inputs/outputs when calling OPC_UA_MethodCall, max.  Number of inputs/outputs when calling OPC_UA_MethodCall, max.  OPC UA Server  Application authentication  Security policies  Security policies  User authentication  GDS support (certificate management)  Number of sessions, max.  Number of accessible variables, max.  Number of accessible variables, max.	<ul> <li>Number of connections, max.</li> </ul>	4
— Number of elements for one call of 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 for session management, per connection, max.  — Number of simultaneous calls of the client instructions for data access, per connection, max.  — Number of registerable nodes, max.  — Number of registerable method calls of OPC_UA_MethodCall, max.  — Number of inputs/outputs when calling OPC_UA_MethodCall, max.  • OPC UA Server  — Application authentication  — Security policies  — User authentication  — GDS support (certificate management)  — Number of sessions, max.  — Number of sessions, max.  300  20  20  100  5  100  7  5  100  100  7  6  7  8  100  7  9  100  7  100  100  100  100		1 000
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OPC_UA_NameSpaceGetIndexList, max.  — Number of elements for one call of OPC_UA_MethodGetHandleList, max.  — Number of simultaneous calls of the client instructions for session management, per connection, max.  — Number of simultaneous calls of the client instructions for data access, per connection, max.  — Number of registerable nodes, max.  — Number of registerable method calls of OPC_UA_MethodCall, max.  — Number of inputs/outputs when calling OPC_UA_MethodCall, max.  • OPC UA Server  OPC UA		20
<ul> <li>Number of elements for one call of OPC_UA_MethodGetHandleList, max.</li> <li>Number of simultaneous calls of the client instructions for session management, per connection, max.</li> <li>Number of simultaneous calls of the client instructions for data access, per connection, max.</li> <li>Number of registerable nodes, max.</li> <li>Number of registerable method calls of OPC_UA_MethodCall, max.</li> <li>Number of inputs/outputs when calling OPC_UA_MethodCall, max.</li> <li>OPC UA Server</li> <li>Application authentication</li> <li>Security policies</li> <li>User authentication</li> <li>GDS support (certificate management)</li> <li>Number of accessible variables, max.</li> <li>100</li> <li>5</li> <li>100</li> <li>20</li> <li>20</li> <li>Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms &amp; Condition (A&amp;C), Custom Address Space</li> <li>Yes</li> <li>available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256, Aes128Sha256Rsa0aep, Aes256Sha256RsaPss</li> <li>"anonymous" or by user name &amp; password</li> <li>Yes</li> <li>Number of accessible variables, max.</li> <li>50000</li> </ul>		20
OPC_UA_MethodGetHandleList, max.  — Number of simultaneous calls of the client instructions for session management, per connection, max.  — Number of simultaneous calls of the client instructions for data access, per connection, max.  — Number of registerable nodes, max.  — Number of registerable method calls of OPC_UA_MethodCall, max.  — Number of inputs/outputs when calling OPC_UA_MethodCall, max.  • OPC UA Server  OPC UA Server  Application authentication  — Security policies  — Security policies  — User authentication  — GDS support (certificate management)  — Number of accessible variables, max.  1 1  1 1  1 1  1 1  1 1  1 1  1 1  1		100
<ul> <li>Number of simultaneous calls of the client instructions for session management, per connection, max.</li> <li>Number of simultaneous calls of the client instructions for data access, per connection, max.</li> <li>Number of registerable nodes, max.</li> <li>Number of registerable method calls of OPC_UA_MethodCall, max.</li> <li>Number of inputs/outputs when calling OPC_UA_MethodCall, max.</li> <li>OPC UA Server</li> <li>OPC UA Server</li> <li>Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms &amp; Condition (A&amp;C), Custom Address Space</li> <li>Yes</li> <li>Security policies</li> <li>available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss</li> <li>User authentication</li> <li>GDS support (certificate management)</li> <li>Number of sessions, max.</li> <li>Number of accessible variables, max.</li> </ul>		
<ul> <li>Number of simultaneous calls of the client instructions for data access, per connection, max.</li> <li>Number of registerable nodes, max.</li> <li>Number of registerable method calls of OPC_UA_MethodCall, max.</li> <li>Number of inputs/outputs when calling OPC_UA_MethodCall, max.</li> <li>OPC UA Server</li> <li>OPC UA Server</li> <li>Application authentication</li> <li>Security policies</li> <li>User authentication</li> <li>GDS support (certificate management)</li> <li>Number of accessible variables, max.</li> <li>5 000</li> <li>100</li> <li>20</li> <li>Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms &amp; Condition (A&amp;C), Custom Address Space</li> <li>Yes</li> <li>available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256RsaPss</li> <li>"anonymous" or by user name &amp; password</li> <li>Yes</li> <li>Number of accessible variables, max.</li> <li>5 000</li> </ul>	<ul> <li>Number of simultaneous calls of the client instructions for session management, per</li> </ul>	1
<ul> <li>Number of registerable nodes, max.</li> <li>Number of registerable method calls of OPC_UA_MethodCall, max.</li> <li>Number of inputs/outputs when calling OPC_UA_MethodCall, max.</li> <li>OPC UA Server</li> <li>Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms &amp; Condition (A&amp;C), Custom Address Space</li> <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>5 000</li> <li>100</li> <li< td=""><td>— Number of simultaneous calls of the client</td><td>5</td></li<></ul>	— Number of simultaneous calls of the client	5
<ul> <li>— Number of registerable method calls of OPC_UA_MethodCall, max.</li> <li>— Number of inputs/outputs when calling OPC_UA_MethodCall, max.</li> <li>● OPC UA Server</li> <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> </ul>		5 000
<ul> <li>— Number of inputs/outputs when calling OPC_UA_MethodCall, max.</li> <li>◆ OPC UA Server</li> <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> </ul> 20 Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space Yes <ul> <li>available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss</li> <li>— "anonymous" or by user name &amp; password</li> <li>Yes</li> <li>So 000</li> </ul>	<ul> <li>Number of registerable method calls of</li> </ul>	
<ul> <li>OPC UA Server</li> <li>Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms &amp; Condition (A&amp;C), Custom Address Space</li> <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> </ul> Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space Yes <ul> <li>available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256Rsa0aep, Aes256Sha256RsaPss</li> <li>"anonymous" or by user name &amp; password</li> <li>Yes</li> <li>Number of accessible variables, max.</li> </ul>	<ul> <li>Number of inputs/outputs when calling</li> </ul>	20
<ul> <li>Application authentication</li> <li>Security policies</li> <li>available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss</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>50 000</li> </ul>		
<ul> <li>— Security policies</li> <li>— Variable security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss</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>50 000</li> </ul>	<ul> <li>Application authentication</li> </ul>	
<ul> <li>— GDS support (certificate management)</li> <li>— Number of sessions, max.</li> <li>— Number of accessible variables, max.</li> <li>50 000</li> </ul>	• •	
<ul> <li>Number of sessions, max.</li> <li>Number of accessible variables, max.</li> <li>50 000</li> </ul>	<ul> <li>User authentication</li> </ul>	·
<ul> <li>Number of sessions, max.</li> <li>Number of accessible variables, max.</li> <li>50 000</li> </ul>	<ul> <li>GDS support (certificate management)</li> </ul>	
<ul><li>Number of accessible variables, max.</li><li>50 000</li></ul>		32
— Number of registerable nodes, max. 10 000		50 000
	<ul> <li>Number of registerable nodes, max.</li> </ul>	10 000

<ul> <li>Number of subscriptions per session, max.</li> </ul>	50
<ul><li>— Sampling interval, min.</li></ul>	100 ms
<ul><li>— Publishing interval, min.</li></ul>	200 ms
<ul> <li>Number of server methods, max.</li> </ul>	20
<ul> <li>Number of inputs/outputs per server method, max.</li> </ul>	20
<ul> <li>Number of monitored items, recommended max.</li> </ul>	4 000; 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>	15 000
<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
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>	160
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
<ul> <li>Variables</li> </ul>	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
<ul> <li>Number of variables, max.</li> </ul>	
— of which status variables, max.	200; per job
— of which control variables, max.	200; per job
Forcing	
• Forcing	Yes
Forcing, variables	Peripheral inputs/outputs
<ul> <li>Number of variables, max.</li> </ul>	200
Diagnostic buffer	
• present	Yes
Number of entries, max.	1 000
— of which powerfail-proof	500
Traces	
Number of configurable Traces	4; Up to 512 KB of data per trace are possible
Interrupts/diagnostics/status information	
Diagnostics indication LED	
• RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	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
WOUGH CONTO	the PLC program; selection guide via the TIA Selection Tool
<ul> <li>Number of available Motion Control resources for</li> </ul>	1 120
technology objects	
Required Motion Control resources	
per speed-controlled axis	40
per positioning axis	80
— per synchronous axis	160
• •	

	90
— per external encoder	80
— per output cam	20
— per cam track	160
— per probe	40
<ul> <li>Number of available Extended Motion Control resources for technology objects</li> </ul>	90
Required Extended Motion Control resources	
— per cam (1 000 points and 50 segments)	2
— per carr (1 000 points and 50 segments)  — per carr (10 000 points and 50 segments)	20
— for each set of kinematics	30
Per leading axis proxy	3
kinematics functions	3
— kinematics with up to 4 interpolating axes	Yes; max. 3D + orientation
— kinematics with up to 4 interpolating axes  — kinematics with 5 or more interpolating axes	No
whereattes with 5 of more interpolating axes  - user-defined kinematics	No
— SIMATIC Safe Kinematics	No
Positioning axis	NO
Number of positioning axes at motion control	11
cycle of 4 ms (typical value)	"
Number of positioning axes at motion control	14
cycle of 8 ms (typical value)	
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	
horizontal installation, min.	-30 °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>	-30 °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	40.00
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
<ul> <li>Installation altitude above sea level, max.</li> </ul>	5 000 m, Restrictions for installation attitudes > 2 000 m, see manual
configuration / header	
configuration / programming / header	
configuration / programming / header Programming language	
configuration / programming / header Programming language — LAD	Yes
configuration / programming / header Programming language — LAD — FBD	Yes
configuration / programming / header Programming language — LAD — FBD — STL	Yes Yes
configuration / programming / header Programming language — LAD — FBD — STL — SCL	Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — STL — SCL — GRAPH	Yes Yes
configuration / programming / header Programming language — LAD — FBD — STL — SCL — GRAPH Know-how protection	Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — STL — SCL — GRAPH Know-how protection  • User program protection/password protection	Yes Yes Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — STL — SCL — GRAPH Know-how protection • User program protection/password protection • Copy protection	Yes Yes Yes Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — STL — SCL — GRAPH Know-how protection  • User program protection/password protection • Copy protection • Block protection	Yes Yes Yes Yes Yes
configuration / programming / header  Programming language  — LAD  — FBD  — STL  — SCL  — GRAPH  Know-how protection  • User program protection/password protection  • Copy protection  • Block protection  Access protection	Yes Yes Yes Yes Yes Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — STL — SCL — GRAPH Know-how protection  • User program protection/password protection • Copy protection • Block protection Access protection • protection of confidential configuration data	Yes Yes Yes Yes Yes Yes Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — STL — SCL — GRAPH Know-how protection  • User program protection/password protection • Copy protection • Block protection Access protection • protection of confidential configuration data • Password for display	Yes
configuration / programming / header Programming language  — LAD  — FBD  — STL  — SCL  — GRAPH  Know-how protection  • User program protection/password protection • Copy protection • Block protection  Access protection  • protection of confidential configuration data • Password for display • Protection level: Write protection	Yes
configuration / programming / header  Programming language  — LAD — FBD — STL — SCL — GRAPH  Know-how protection  • User program protection/password protection • Copy protection • Block protection  Access protection  • protection of confidential configuration data • Password for display • Protection level: Write protection • Protection level: Read/write protection	Yes
configuration / programming / header  Programming language  — LAD  — FBD  — STL  — SCL  — GRAPH  Know-how protection  • User program protection/password protection  • Copy protection  • Block protection  Access protection  • protection of confidential configuration data  • Password for display  • Protection level: Write protection	Yes
configuration / programming / header  Programming language  — LAD  — FBD  — STL  — SCL  — GRAPH  Know-how protection  • User program protection/password protection  • Copy protection  • Block protection  Access protection  • protection of confidential configuration data  • Password for display  • Protection level: Write protection  • Protection level: Read/write protection  • Protection level: Write protection  • Protection level: Write protection  • Protection level: Write protection	Yes
configuration / programming / header  Programming language  — LAD  — FBD  — STL  — SCL  — GRAPH  Know-how protection  • User program protection/password protection • Copy protection  • Block protection  Access protection  • protection of confidential configuration data  • Password for display  • Protection level: Write protection  • Protection level: Complete protection  programming / cycle time monitoring / header	Yes
configuration / programming / header  Programming language  — LAD  — FBD  — STL  — SCL  — GRAPH  Know-how protection  • User program protection/password protection • Copy protection  • Block protection  Access protection  • protection of confidential configuration data  • Password for display  • Protection level: Write protection  • Protection level: Write protection  • Protection level: Write protection  • Protection level: Complete protection  programming / cycle time monitoring / header  • lower limit	Yes
configuration / programming / header  Programming language  — LAD — FBD — STL — SCL — GRAPH  Know-how protection  • User program protection/password protection • Copy protection • Block protection  Access protection  • protection of confidential configuration data • Password for display • Protection level: Write protection • Protection level: Read/write protection • Protection level: Write protection • Protection level: Complete protection  programming / cycle time monitoring / header • lower limit • upper limit	Yes
configuration / programming / header  Programming language  — LAD  — FBD  — STL  — SCL  — GRAPH  Know-how protection  • User program protection/password protection • Copy protection  • Block protection  Access protection  • protection of confidential configuration data  • Password for display  • Protection level: Write protection  • Protection level: Write protection  • Protection level: Write protection  • Protection level: Complete protection  programming / cycle time monitoring / header  • lower limit	Yes

Height 147 mm
Depth 129 mm

Weights

Weight, approx. 336 g

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