6ES7517-3TP00-0AB0

Data sheet



SIMATIC S7-1500T, CPU 1517T-3 PN/DP, Central processing unit with work memory 3 MB for program and 8 MB for data, 1st interface: PROFINET IRT with 2-port switch, 2nd interface, Ethernet, 3rd interface, PROFIBUS, 2 ns bit performance, SIMATIC Memory Card required

General information	
Product type designation	CPU 1517T-3 PN/DP
HW functional status	FS11
Firmware version	V3.1
FW update possible	Yes
Product function	
● I&M data	Yes; I&M0 to I&M3
• Isochronous mode	Yes; Distributed and central; with minimum OB 6x cycle of 250 μs (distributed) and 1 ms (central)
SysLog	Yes
Engineering with	
STEP 7 TIA Portal configurable/integrated from version	V19 (FW V3.1) / V14 (FW V2.0) or higher
Configuration control	
via dataset	Yes
Display	
Screen diagonal [cm]	6.1 cm
Control elements	
Number of keys	6
Mode selector switch	1
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Mains buffering	
 Mains/voltage failure stored energy time 	5 ms
Repeat rate, min.	1/s
Input current	
Current consumption (rated value)	1.55 A
Current consumption, max.	1.9 A
Inrush current, max.	1.9 A; Rated value
l²t	0.4 A ² ·s
Power	
Infeed power to the backplane bus	12 W
Power consumption from the backplane bus (balanced)	30 W
Power loss	
Power loss, typ.	24 W
Memory	
Number of slots for SIMATIC memory card	1
SIMATIC memory card required	Yes

Work memory	
Work memory • integrated (for program)	3 Mbyte
integrated (for program)integrated (for data)	8 Mbyte
	6 MDyte
Load memory	20 Ob. 4-
Plug-in (SIMATIC Memory Card), max.	32 Gbyte
Backup	
maintenance-free	Yes
CPU processing times	
for bit operations, typ.	2 ns
for word operations, typ.	3 ns
for fixed point arithmetic, typ.	3 ns
for floating point arithmetic, typ.	12 ns
CPU-blocks	
Number of elements (total)	12 000; 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.	8 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	
Number range	0 65 535
• Size, max.	1 Mbyte
FC	,
Number range	0 65 535
• Size, max.	1 Mbyte
• Size, max.	1 MDy to
	4 Mbyto
Size, max. Number of free cycle ORs.	1 Mbyte
Number of free cycle OBs Number of free clare OBs	100
Number of time alarm OBs	20
Number of delay alarm OBs	20
Number of cyclic interrupt OBs	20; with minimum OB 3x cycle of 100 μs
 Number of process alarm OBs 	50
 Number of DPV1 alarm OBs 	3
 Number of isochronous mode OBs 	3
 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
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	2 010
•	Yes
— adjustable	165
IEC timer	Any (only limited by the projectory)
Number	Any (only limited by the main memory)
Detection.	
Retentivity	
— adjustable	Yes
— adjustable Data areas and their retentivity	
— adjustable	768 kbyte; In total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 700 KB 8 Mbyte; When using PS 6 0W 24/48/60 V DC HF

Flag	
• Size, max.	16 kbyte
Number of clock memories	8; 8 clock memory bit, grouped into one clock memory byte
Data blocks	o, o alone money on, grouped into one distribution ofto
Retentivity adjustable	Yes
Retentivity adjustable Retentivity preset	No
Local data	
• per priority class, max.	64 kbyte; max. 16 KB per block
Address area	of hoye, max. To he per brook
Number of IO modules	16 384; max. number of modules / submodules
I/O address area	10 304, max. number of modules / submodules
• Inputs	32 kbyte; All inputs are in the process image
Outputs	32 kbyte; All outputs are in the process image
per integrated IO subsystem	52 kbyte, All outputs are in the process image
— Inputs (volume)	32 khyte: May 32 KR via Y1: may 8 KR via Y2 or Y3
— Inputs (volume) — Outputs (volume)	32 kbyte; Max. 32 KB via X1; max. 8 KB via X2 or X3 32 kbyte; Max. 32 KB via X1; max. 8 KB via X2 or X3
per CM/CP	OZ KUYLG, IVIAN. OZ KID VIA NI, IIIAN. O KID VIA NZ UI NO
•	8 kbyte
— Inputs (volume)	
— Outputs (volume)	8 kbyte
Subprocess images • Number of subprocess images may	32
Number of subprocess images, max. Hardware configuration.	32
Hardware configuration	C4. A distributed I/O system is shoulded and and activities internal in
Number of distributed IO systems	64; A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET or PROFIBUS communication modules, but also by the connection of I/O via AS-i master modules or links (e.g. IE/PB-Link)
Number of DP masters	
integrated	1
• Via CM	8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total
Number of IO Controllers	
• integrated	2
• Via CM	8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total
Rack	mocreta in total
Modules per rack, max.	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	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
• to DP, master	Yes
• on DP, device	Yes
• in AS, master	Yes
• in AS, device	Yes
• on Ethernet via NTP	Yes
Interfaces	
Number of PROFINET interfaces	2
Number of PROFIBUS interfaces	1
Interface	
Interface types	Voc. V1
RJ 45 (Ethernet) Number of ports	Yes; X1
Number of ports integrated quiteb	2 Voa
• integrated switch	Yes
Protocols	

Yes; IPv4 • IP protocol • PROFINET IO Controller Yes PROFINET IO Device Yes • SIMATIC communication Yes • Open IE communication Yes; Optionally also encrypted Web server Media redundancy Yes **PROFINET IO Controller** Services - Isochronous mode Yes Yes; Requirement: IRT and isochronous mode (MRPD optional) Direct data exchange — IRT Yes - PROFlenergy Yes; per user program - Prioritized startup Yes; Max. 32 PROFINET devices 512; In total, up to 1 000 distributed I/O devices can be connected via AS-i, - Number of connectable IO Devices, max. PROFIBUS or PROFINET - Of which IO devices with IRT, max. - Number of connectable IO Devices for RT, max. 512 - of which in line, max. - Number of IO Devices that can be simultaneously 8: in total across all interfaces 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 quantity of configured user data - PROFINET Security Class Update time for IRT — for send cycle of 250 µs 250 µs to 4 ms — for send cycle of 500 µs 500 μs to 8 ms - for send cycle of 1 ms 1 ms to 16 ms - for send cycle of 2 ms 2 ms to 32 ms - for send cycle of 4 ms 4 ms to 64 ms — With IRT and parameterization of "odd" send cycles Update time = set "odd" send clock (any multiple of 125 $\mu s:375~\mu s,\,625~\mu s \dots 3$ 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 - Isochronous mode No -- IRT Yes - PROFlenergy Yes; per user program Shared device Yes - Number of IO Controllers with shared device, max. 4 - activation/deactivation of I-devices Yes; per user program - Asset management record Yes; per user program - PROFINET Security Class SNMP Configuration and DCP Read Only 2. Interface Interface types • RJ 45 (Ethernet) Yes; X2 Number of ports 1 • integrated switch No Protocols Yes; IPv4 • IP protocol • PROFINET IO Controller Yes PROFINET IO Device Yes • SIMATIC communication Yes • Open IE communication Yes; Optionally also encrypted Web server Yes

Services	Media redundancy	No
Services	·	
- Isochronous made - Direct data exchange - Right - PROFilerargy - Priorized startup - Number of connectable IO Devices, max In Start Startup - Number of connectable IO Devices for RT, max In Startup Interface - Number of IO Devices per tool, max In Startup Interface - PROFINET Security Class - PROFINET Security Class - In Interface - In In		
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- PROFilentry - Promitized startup - Number of connectable IO Devices, max Number of connectable IO Devices for RT, max In which in line, max In which in line, max Number of IO Devices that can be simultaneously activated/deachvised, max Number of IO Devices per tool, max Number of IO Devices per tool, max Updaing times - PROFINET Security Class - PROFINET Security Class - In material control of IT I No Configured user data - In material control of IT No Controllers with shared device, max In material device - Number of IO Controllers with shared device, max Asset management record - PROFINET Security Class - Number of IO Controllers with shared device, max Asset management record - PROFINET Security Class - Number of IO Controllers with shared device, max Asset management record - PROFINET Security Class - Number of IO Controllers with shared device, max Asset management record - PROFINET Security Class - Number of IO Controllers with shared device, max PROFINET Security Class - Number of IO Controllers with shared device, max PROFINET Security Class - Number of IO Controllers with shared device, max PROFINET Security Class - Number of IO Controllers with shared device, max PROFINET Security Class - Number of IO Security Class	-	
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- Asset management record - Yes; per user program - PROFINET Security Class SNMP Configuration and DCP Read Only 3. Interface types - RS 485 Yes; X3 - Number of ports 1 Protocols - PROFIBUS DP master Yes - PROFIBUS DP device No - SIMATIC communication Yes PROFIBUS DP master - Number of connections, max. 48; for the integrated PROFIBUS DP interface - Number of DP devices 125; In total, up to 1 000 distributed I/O devices can be connected via AS-I, PROFIBUS or PROFINET Services - Equidistance Yes - Isochronous mode Yes - activation/deactivation of DP devices Yes Interface types 1. J 45 (Ethermet) - 100 Mbps Yes - Autonegotiation Yes - Autocrossing Yes - Interface types - Interface types - Autocrossing Yes - Interface types - Autocrossing Yes - Interface types - Interface types - Autocrossing Yes - Autocrossing Yes - Interface types - Interface types - Fransmission rate, max. 12 Mbit/s - Transmission rate, max. 320; via integrated interfaces of the CPU and connected CPs / CMs		
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Protocols PROFIBUS DP master PROFIBUS DP device SIMATIC communication PROFIBUS DP master Number of connections, max. Talentaria Ethernet status LED Protocols PROFIBUS DP master Aves PROFIBUS DP master Number of connections, max. As; for the integrated PROFIBUS DP interface Ats; for the integrat		
PROFIBUS DP master PROFIBUS DP device No SIMATIC communication PROFIBUS DP master Number of connections, max. Number of connections, max. Services PROFIBUS or PROFINET Yes Proside types RJ 45 (Ethernet) PROFIBUS OF PROFINET Yes Profice types RJ 45 (Ethernet) PROFIBUS DP interface No No Number of connections, max. Supplied the Profit of the CPU and connected CPs / CMs		
PROFIBUS DP device SIMATIC communication Yes PROFIBUS DP master Number of connections, max. A8; for the integrated PROFIBUS DP interface Task, number of DP devices Task, in total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Services Equidistance Yes Isochronous mode Yes Activation/deactivation of DP devices RJ 45 (Ethernet) 100 Mbps Yes Autonegotiation Yes Autorossing Industrial Ethernet status LED Yes RS 485 Transmission rate, max. Protocols PROFIsafe No Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs		V
SIMATIC communication PROFIBUS DP master Number of connections, max. max. number of DP devices PROFIBUS or PROFIBUS DP interface 125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Services Equidistance Services PEquidistance Isochronous mode Activation/deactivation of DP devices Pes Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autocrossing Industrial Ethernet status LED Prostase Profisafe No Number of connections Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs		
PROFIBUS DP master Number of connections, max. Max. number of DP devices PROFIBUS or PROFIBUS DP interface 125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Services Equidistance Services Pactivation/deactivation of DP devices Yes activation/deactivation of DP devices Yes Interface types RJ 45 (Ethernet) Autorogosing Autorogosing Industrial Ethernet status LED Yes Industrial Ethernet status LED Yes State Transmission rate, max. Yes Web No Number of connections Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs		
Number of connections, max. Max. number of DP devices Iterfaces - Equidistance - activation/deactivation of DP devices RJ 45 (Ethernet) Autocrossing - Industrial Ethernet status LED RS 485 Transmission rate, max. PROFISUS or PROFIBUS or PROFINET 48; for the integrated PROFIBUS DP interface 125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes - Loudistance - Yes - Activation/deactivation of DP devices Yes No Number of connections, max. 48; for the integrated PROFIBUS DP interface 125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFIBUS DP interface Yes - Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interface Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interface Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces Yes - Loudistributed I/O devices Yes - Loudistributed I/O devices - Loudistributed		Yes
max. number of DP devices		40 f . II
PROFIBUS of PROFINET Services - Equidistance		
Equidistance Yes Isochronous mode Yes activation/deactivation of DP devices Yes Interface types RJ 45 (Ethernet)	max. number of DP devices	
Isochronous mode activation/deactivation of DP devices Interface types RJ 45 (Ethernet) Interface types RJ 45 (Ethernet) Industrial Ethernet status LED RS 485 Transmission rate, max. Protocols PROFIsafe No Number of connections Number of connections, max. Number of connections, max. Protocols Number of connections, max. Number of connections, max. Yes Yes Yes Yes Yes Yes Yes Ye	Services	
	— Equidistance	Yes
Interface types RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Autocrossing • Industrial Ethernet status LED RS 485 • Transmission rate, max. Protocols PROFIsafe No Number of connections • Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs	— Isochronous mode	Yes
RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Autocrossing • Industrial Ethernet status LED RS 485 • Transmission rate, max. Protocols PROFIsafe No Number of connections • Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs	 activation/deactivation of DP devices 	Yes
RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Autocrossing • Industrial Ethernet status LED RS 485 • Transmission rate, max. Protocols PROFIsafe No Number of connections • Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs	Interface types	
 100 Mbps Autonegotiation Autocrossing Industrial Ethernet status LED RS 485 Transmission rate, max. Mumber of connections Number of connections, max. 12 Mbit/s 		
 Autonegotiation Autocrossing Industrial Ethernet status LED RS 485 Transmission rate, max. Mumber of connections Number of connections, max. Yes Yes Yes Tes No Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs 	,	Yes
 Autocrossing Industrial Ethernet status LED Yes RS 485 Transmission rate, max. Mbit/s Protocols PROFIsafe Number of connections Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs 	·	
● Industrial Ethernet status LED RS 485 ● Transmission rate, max. 12 Mbit/s Protocols PROFIsafe No Number of connections ● Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs	-	
RS 485 • Transmission rate, max. 12 Mbit/s Protocols PROFIsafe No Number of connections • Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs		
● Transmission rate, max. Protocols PROFIsafe No Number of connections ● Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs		100
PROFIsafe No Number of connections Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs		12 Mhit/s
PROFIsafe No Number of connections Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs	·	12 IVIDIUS
Number of connections • Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs		No
Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs		INU
Number of connections reserved for ES/HMI/web		The state of the s
	Number of connections reserved for ES/HMI/web	10
Number of connections via integrated interfaces 288	Number of connections via integrated interfaces	288

 Number of S7 routing paths 	64; in total, only 16 S7-Routing connections are supported via PROFIBUS
Redundancy mode	and the state of t
H-Sync forwarding	Yes
Media redundancy	
— Media redundancy	only via 1st interface (X1)
— MRP	Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client
 MRP interconnection, supported 	Yes; as MRP ring node according to IEC 62439-2 Edition 3.0
— MRPD	Yes; Requirement: IRT
 Switchover time on line break, typ. 	200 ms; For MRP, bumpless for MRPD
Number of stations in the ring, max.	50
SIMATIC communication	
PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
• S7 routing	Yes
Data record routing	Yes
S7 communication, as server	Yes
S7 communication, as client Llear data parish, may	Yes
User data per job, max. Open IE communication	See online help (S7 communication, user data size)
TCP/IP	Yes
— Data length, max.	64 kbyte
several passive connections per port, supported	Yes
ISO-on-TCP (RFC1006)	Yes
— Data length, max.	64 kbyte
• UDP	Yes
— Data length, max.	2 kbyte; 1 472 bytes for UDP broadcast
— UDP multicast	Yes; 128 multicast circuits (of which max. 5 via X1)
• DHCP	Yes
• DNS	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Encryption	Yes; Optional
Web server	
• HTTP	Yes; Standard and user pages
• HTTPS	Yes; Standard and user pages
• web API	
Number of sessions, max.	200
 number of simultaneous HTTP calls, max. 	4
— HTTP request body, max.	131 072 byte
OPC UA	
Runtime license required	Yes; "Large" license required
OPC UA Client	Yes; Data Access (registered Read/Write), Method Call
— Application authentication	Yes
— Security policies	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
— User authentication	"anonymous" or by user name & password
— Number of connections, max.	40
 Number of nodes of the client interfaces, recommended max. 	5 000
 Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/OPC_I max. 	300 L
 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 	1
instructions for session management, per connection, max.	
instructions for session management, per connection,	5
instructions for session management, per connection, max.— Number of simultaneous calls of the client	5 5 000

OPC_UA_MethodCall, max.	
Number of inputs/outputs when calling	20
OPC_UA_MethodCall, max.	
OPC UA Server	Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms & Condition (A&C), Custom Address Space
 Application authentication 	Yes
— Security policies	available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss
 User authentication 	"anonymous" or by user name & password
 — GDS support (certificate management) 	Yes
Number of sessions, max.	64
 Number of accessible variables, max. 	200 000
 Number of registerable nodes, max. 	50 000
 Number of subscriptions per session, max. 	50
— Sampling interval, min.	10 ms
— Publishing interval, min.	10 ms
 Number of server methods, max. 	100
 Number of inputs/outputs per server method, max. 	20
 Number of monitored items, recommended max. 	10 000; for 1 s sampling interval and 1 s send interval
 Number of server interfaces, max. 	10 of each "Server interfaces" / "Companion specification" type and 20 of the type "Reference namespace"
 Number of nodes for user-defined server interfaces, max. 	30 000
 Alarms and Conditions 	Yes
 Number of program alarms 	400
Number of alarms for system diagnostics	200
Further protocols	
• MODBUS	Yes; MODBUS TCP
Isochronous mode	
Equidistance	Yes
S7 message functions	
Number of login stations for message functions, max.	64
number of subscriptions, max.	750
number of tags/attributes for subscriptions, max.	20 000
Program alarms	Yes
Number of configurable program messages, max.	10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH
Number of loadable program messages in RUN, max.	10 000
Number of simultaneously active program alarms	
· · · · ·	
Number of program alarms	2 000
,	2 000 1 000
Number of program alarms	
Number of program alarmsNumber of alarms for system diagnostics	1 000
 Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects 	1 000
 Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions	1 000 480
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering)	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients)
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control Status/control variable Variables Number of variables, max.	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. — of which status variables, max.	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control Variables Number of variables, max. — of which status variables, max. — of which control variables, max.	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job
Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
 Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing Forcing 	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
 Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. of which status variables, max. of which control variables, max. Forcing Forcing, variables 	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs
 Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing Forcing Forcing, variables Number of variables, max. 	1 000 480 Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs
 Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer	Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200
 Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present 	Yes; Parallel online access possible for up to 10 engineering systems Yes; Up to 16 simultaneously (in total across all ES clients) No 20 No Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes

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Traces	
Number of configurable Traces	8
Memory size per trace, max.	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT 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
Number of available Motion Control resources for	program; selection guide via the TIA Selection Tool 10 240
technology objects	
Required Motion Control resources	
— per speed-controlled axis	40
— per positioning axis	80
— per synchronous axis	160
— per external encoder	80
— per output cam	20
— per cam track	160
— per probe	40
 Number of available Extended Motion Control resources for technology objects 	256
 Required Extended Motion Control resources 	
per cam (1 000 points and 50 segments)	2
per cam (10 000 points and 50 segments)	20
for each set of kinematics	30
— per Interpreter	60
 Per leading axis proxy 	3
 Positioning axis 	
 Number of positioning axes at motion control cycle of 4 ms (typical value) 	70
 Number of positioning axes at motion control cycle of 8 ms (typical value) 	128
Controller	
PID_Compact	Yes; Universal PID controller with integrated optimization
PID_3Step	Yes; PID controller with integrated optimization for valves
PID-Temp	Yes; PID controller with integrated optimization for temperature
Counting and measuring	
High-speed counter	Yes
Standards, approvals, certificates	
Ecological footprint	
environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	570 kg
— global warming potential, (total) [CO2 eq] — global warming potential, (during production) [CO2	96.9 kg
— global warming potential, (during production) [CO2 eq] — global warming potential, (during operation) [CO2	483 kg
eq]	
— global warming potential, (after end of life cycle) [CO2 eq] Ambient conditions	-9.97 kg
Ambient conditions	
Ambient temperature during operation	0.00
horizontal installation, min.horizontal installation, max.	0 °C 60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off
a vertical installation, min	
vertical installation, min.	0 °C
vertical installation, max.	40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off
Ambient temperature during storage/transportation	40.00
• min.	-40 °C 70 °C
• max.	

Altitude during operation relating to sea level	
Installation altitude above sea level, max.	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
— CFC	Yes
— GRAPH	Yes
Know-how protection	
 User program protection/password protection 	Yes
Copy protection	Yes
Block protection	Yes
Access protection	
 protection of confidential configuration data 	Yes
 Password for display 	Yes
 Protection level: Write protection 	Yes
 Protection level: Read/write protection 	Yes
 Protection level: Write protection for Failsafe 	No
 Protection level: Complete protection 	Yes
User administration	Yes; device-wide
programming / cycle time monitoring / header	
• lower limit	adjustable minimum cycle time
• upper limit	adjustable maximum cycle time
Dimensions	
Width	175 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	1 929 g

10/9/2024

last modified: