Data sheet

6ES7517-3TP00-0AB0



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			
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 evels 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 Glock memory bit, grouped into one clock memory byte		
Retentivity adjustable	Yes		
Retentivity adjustable Retentivity preset	No		
Local data			
• per priority class, max.	64 kbyte; max. 16 KB per block		
Address area	ot rayle, man. To the per block		
Number of IO modules	16 204: max, number of modules / submodules		
I/O address area	16 384; max. number of modules / submodules		
	22 khyta: All inputs are in the process image		
• Inputs	32 kbyte; All inputs are in the process image		
Outputs Outputs Outputs	32 kbyte; All outputs are in the process image		
per integrated IO subsystem	22 khyto: May 22 KB via V1: may 0 KB via V2 or V2		
— Inputs (volume)	32 kbyte; Max. 32 KB via X1; max. 8 KB via X2 or X3		
— Outputs (volume)	32 kbyte; Max. 32 KB via X1; max. 8 KB via X2 or X3		
per CM/CP	O lebo de		
— Inputs (volume)	8 kbyte		
— Outputs (volume)	8 kbyte		
Subprocess images			
Number of subprocess images, max.	32		
Hardware configuration			
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		
	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	mondu ii totui		
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		
1. Interface			
Interface types			
• RJ 45 (Ethernet)	Yes; X1		
Number of ports	2		
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 Yes 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 - Prioritzed startup - Number of connectable IO Devices, max In Time of Connectable IO Devices for RT, max Number of connectable IO Devices for RT, max In Start of Connectable IO Devices for RT, max In Start of Connectable IO Devices for RT, max Number of IO Devices per tool, max Number of IO Devices per tool, max Number of IO Devices per tool, max Updating times - PROFINET Security Class - PROFINET Security Class - In Time of IT In Time of				
- Direct data exchange - IRT - IRT - PROFilerarry - PROFilerarry - Profilized darup - Number of connectable IO Devices, max Number of connectable IO Devices for RT, max Of which in line, max - Number of IO Devices that can be simultaneously activated/deactivated, max Number of IO Devices per tool, max Number of IO Devices per tool, max Updating times - PROFINET Security Class - PROFINET Security Class - I Update time for RT - In the number of IO Devices, and on the quantity of configured user data - Updating times - PROFINET Security Class - I Update time for RT - In the number of IO Devices, and on the quantity of configured user data - PROFINET IO Device - Services - Isochronous mode - IRT - PROFInerry - PROFInerry - PROFInerry - Prontized daruph - Shared device - PROFINET security Class - Individual of I-devices - RS assistance - RS assistance - RS assistance - RS assistance - PROFINET Security Class - No - No - PROFINET Security Class - No - No - PROFINET Security Class - No - PROFINET Security Class - No - No - PROFINET Security Class - No - RS assistance - PROFINET Security Class - No - RS assistance - RS assist		No		
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set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data - PROFINET Security Class 1	•			
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PROFINET IO Device Services - Isochronous mode	Update time for RT			
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- Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record - PROFINET Security Class 3. Interface Interface types - RS 485 - PROFIBUS DP master - PROFIBUS DP master - PROFIBUS DP device - SIMATIC communication - PROFIBUS DP master - Number of connections, max Max. number of DP devices - Equidistance - Equidistance - Equidistance - Services - Equidistance - Services - Equidistance - Services - Isochronous mode - activation/deactivation of DP devices - Autocrossing - Number of DP devices - Autocrossing - Autocrossing - Interface types - Interface types - Autocrossing - Interface types - Autocrossing - Transmission rate, max Wes - Transmission rate, max Number of connections - Number of connections				
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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 - Autonegotiation Yes - Autocrossing Yes - Autocrossing Yes - Interface the Status LED Yes RS 485 - Transmission rate, max. 12 Mbit/s PROFISafe No Number of connections, max. 320; via integrated interfaces of the CPU and connected CPs / CMs				
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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 No RS 485 Transmission rate, max. 12 Mbit/s Protocols PROFIsafe No 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 or PROFIBUS DP interface Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS or PROFIBUS DP interface Yes - Loudistributed I/O devices can be connected via AS-i, PROFIBUS DP interfaces of the CPU and connected CPs / CMs		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 Yes RS 485 Transmission rate, max. 12 Mbit/s No Number of connections 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				
	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 A Ligar 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		

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		
	program; selection guide via the TIA Selection Tool		
Number of available Motion Control resources for technology objects.	10 240		
technology objects			
Required Motion Control resources	40		
— 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		
 kinematics functions 			
 kinematics with up to 4 interpolating axes 	Yes; max. 3D + orientation		
 kinematics with 5 or more interpolating axes 	No		
 user-defined kinematics 	Yes		
 — SIMATIC Safe Kinematics 	No		
 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, (during production) [CO2	96.9 kg		
eq] — global warming potential, (during operation) [CO2	483 kg		
eq] — global warming potential, (after end of life cycle)	-9.97 kg		
[CO2 eq] Ambient conditions			
Ambient temperature during operation			
horizontal installation, min.	0 °C		
horizontal installation, min. horizontal installation, max.	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the		
 nonzontal installation, max. vertical installation, min. 	display is switched off 0 °C		
• vertical installation, IIIII.			

• vertical installation, max.	40 °C; Display: 40 °C, at an op- display is switched off	40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off			
Ambient temperature during storage/transportation					
• min.	-40 °C				
• max.	70 °C				
Altitude during operation relating to sea level					
 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	Yes			
Copy protection	Yes	Yes			
Block protection	Yes	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				
Classifications					
		Version	Classification		
	eClass	14	27-24-22-07		
	eClass	12	27-24-22-07		
		9.1			
	eClass		27-24-22-07		
	eClass	9	27-24-22-07		
	eClass	8	27-24-22-07		
	eClass	7.1	27-24-22-07		
	eClass	6	27-24-22-07		
	ETIM	9	EC000236		
	ETIM	8	EC000236		
	ETIM	7	EC000236		
	IDEA	4	3565		
	UNSPSC	15	32-15-17-05		
Approvals / Certificates					

Approvals / Certificates

General Product Approval

Manufacturer Declara-tion Miscellaneous







Metrological Approval

EMV Environment

<u>KC</u>





last modified: 12/8/2024 🖸