SIEMENS

Data sheet

6ES7516-3TN00-0AB0



SIMATIC S7-1500T, CPU 1516T-3 PN/DP, central processing unit with work memory 3 MB for program and 7.5 MB for data, 1st interface: PROFINET IRT with 2-port switch, 2nd interface, Ethernet, 3rd interface, PROFIBUS, 6 ns bit performance, SIMATIC Memory Card required

General information	
Product type designation	CPU 1516T-3 PN/DP
HW functional status	FS11
Firmware version	V3.0
Product function	
 I&M data 	Yes; I&M0 to I&M3
Isochronous mode	Yes; Distributed and central; with minimum OB 6x cycle of 375 μs (distributed) and 1 ms (central)
Engineering with	
 STEP 7 TIA Portal configurable/integrated from version 	V18 (FW V3.0) / V15 (FW V2.5) 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)	1.2 A
Current consumption, max.	1.55 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	

a integrated (for program)	2 Mbuto
integrated (for program)	3 Mbyte
integrated (for data)	7.5 Mbyte
Load memory	22 Chuta
Plug-in (SIMATIC Memory Card), max. Backup	32 Gbyte
maintenance-free	Yes
CPU processing times	2
for bit operations, typ.	6 ns
for word operations, typ.	7 ns
for fixed point arithmetic, typ.	9 ns
for floating point arithmetic, typ.	37 ns
CPU-blocks	
Number of elements (total)	8 000; 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.	7.5 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	0 05 525
Number range	0 65 535
• Size, max.	1 Mbyte
FC	0 05 535
Number range	0 65 535
• Size, max.	1 Mbyte
OB Size men	4 Mb. 4-
• Size, max.	1 Mbyte
Number of free cycle OBs	100
Number of time alarm OBs	20
Number of delay alarm OBs	20
Number of cyclic interrupt OBs	20; With minimum OB 3x cycle of 250 µs
Number of process alarm OBs	50
 Number of DPV1 alarm OBs 	3
 Number of isochronous mode OBs 	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	
— 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.	512 kbyte; In total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 472 KB
Extended retentive data area (incl. timers, counters, flags),	7.5 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 preset	No
Local data	
 per priority class, max. 	64 kbyte; max. 16 KB per block
Address area	
Number of IO modules	8 192; 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	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	IIIKS (e.g. IE/FD-LIIK)
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	
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	
Time of day	
Clock	Underson also h
• Type	Hardware clock
Backup time	6 wk; At 40 °C ambient temperature, typically
Deviation per day, max.	10 s; Тур.: 2 s
Operating hours counter Number	16
Number Clock synchronization	
supported	Yes
to DP, master	Yes
• in AS, master	Yes
• in AS, master • in AS, slave	Yes
on Ethernet via NTP	Yes
Interfaces	
	0
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	
IP protocol DDOFINET IO Controller	Yes; IPv4
PROFINET IO Controller	Yes
PROFINET IO Device SIMATIC communication	Yes
 SIMATIC communication 	Yes

Open IE communication	Yes; Optionally also encrypted
Web server	Yes
Media redundancy	Yes
PROFINET IO Controller	
Services	
— PG/OP communication	Yes
— Isochronous mode	Yes
 — Direct data exchange 	Yes; Requirement: IRT and isochronous mode (MRPD optional)
— IRT	Yes
— PROFlenergy	Yes; per user program
— Prioritized startup	Yes; Max. 32 PROFINET devices
- Number of connectable IO Devices, max.	256; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET
— Of which IO devices with IRT, max.	64
 — Number of connectable IO Devices for RT, max. 	256
— of which in line, max.	256
— Number of IO Devices that can be	8; in total across all interfaces
simultaneously activated/deactivated, max.	
- Number of IO Devices per tool, max.	8
— Updating times	The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the 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 minimum update time of 375 μs of the isochronous OB is decisive
— for send cycle of 500 µs	500 µs to 8 ms
— for send cycle of 1 ms	1 ms to 16 ms
— for send cycle of 2 ms	2 ms to 32 ms
— for send cycle of 4 ms	4 ms to 64 ms
 With IRT and parameterization of "odd" send cycles 	Update time = set "odd" send clock (any multiple of 125 μ s: 375 μ s, 625
Update time for RT	μs 3 875 μs)
— 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 Number of IQ Controllers with 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
2. Interface	
Interface types	
• RJ 45 (Ethernet)	Yes; X2
Number of ports	1
integrated switch	No
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	No
PROFINET IO Controller	
Services	Vee
— PG/OP communication	Yes

 — Isochronous mode 	
	No
— Direct data exchange	No
— IRT	No
— PROFlenergy	Yes; per user program
 Prioritized startup 	No
— Number of connectable IO Devices, max.	32; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET
 — Number of connectable IO Devices for RT, max. 	32
— of which in line, max.	32
— Number of IO Devices that can be	8; in total across all interfaces
simultaneously activated/deactivated, max.	-,
- Number of IO Devices per tool, max.	8
— Updating times	The minimum value of the update time also depends on communication
	share set for PROFINET IO, on the number of IO devices, and on the
	quantity of configured user data
Update time for RT	
— for send cycle of 1 ms	1 ms to 512 ms
PROFINET IO Device	
Services	
— PG/OP communication	Yes
— Isochronous mode	No
— IRT	No
— PROFlenergy	Yes; per user program
— Prioritized startup	No
— Shared device	Yes
 — Number of IO Controllers with shared device, 	4
max.	
 activation/deactivation of I-devices 	Yes; per user program
— Asset management record	Yes; per user program
3. Interface	
Interface types	
• RS 485	Yes; X3
Number of ports	1
Protocols	
 PROFIBUS DP master 	Yes
 PROFIBUS DP slave 	No
 SIMATIC communication 	Yes
Web server	Yes
PROFIBUS DP master	
 Number of connections, max. 	48; for the integrated PROFIBUS DP interface
Number of connections, max.Number of DP slaves, max.	125; In total, up to 1 000 distributed I/O devices can be connected via
Number of DP slaves, max.	-
Number of DP slaves, max. Services	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET
Number of DP slaves, max. Services — PG/OP communication	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET
Number of DP slaves, max. Services — PG/OP communication — Equidistance	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes
Number of DP slaves, max. Services — PG/OP communication — Equidistance — Isochronous mode	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes
Number of DP slaves, max. Services — PG/OP communication — Equidistance — Isochronous mode — Activation/deactivation of DP slaves	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes
Number of DP slaves, max. Services — PG/OP communication — Equidistance — Isochronous mode	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes
Number of DP slaves, max. Services — PG/OP communication — Equidistance — Isochronous mode — Activation/deactivation of DP slaves	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes
Number of DP slaves, max. Services — PG/OP communication — Equidistance — Isochronous mode — Activation/deactivation of DP slaves Interface types	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes
Number of DP slaves, max. Services — PG/OP communication — Equidistance — Isochronous mode — Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet)	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes
Number of DP slaves, max. Services — PG/OP communication — Equidistance — Isochronous mode — Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) • 100 Mbps	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes
 Number of DP slaves, max. Services PG/OP communication Equidistance Isochronous mode Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation 	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes
 Number of DP slaves, max. Services PG/OP communication Equidistance Isochronous mode Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autocrossing 	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes Yes Yes
 Number of DP slaves, max. Services PG/OP communication Equidistance Isochronous mode Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autocrossing Industrial Ethernet status LED 	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes Yes Yes
 Number of DP slaves, max. Services PG/OP communication Equidistance Isochronous mode Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autocrossing Industrial Ethernet status LED RS 485 	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
 Number of DP slaves, max. Services PG/OP communication Equidistance Isochronous mode Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autorossing Industrial Ethernet status LED RS 485 Transmission rate, max. 	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
 Number of DP slaves, max. Services PG/OP communication Equidistance Isochronous mode Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autocrossing Industrial Ethernet status LED RS 485 Transmission rate, max. 	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes Yes 12 Mbit/s
 Number of DP slaves, max. Services PG/OP communication Equidistance Isochronous mode Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autorossing Industrial Ethernet status LED RS 485 Transmission rate, max. Protocols 	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes No
 Number of DP slaves, max. Services PG/OP communication Equidistance Isochronous mode Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autocrossing Industrial Ethernet status LED RS 485 Transmission rate, max. Protocols PROFIsafe Number of connections 	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes Yes 12 Mbit/s
 Number of DP slaves, max. Services PG/OP communication Equidistance Isochronous mode Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autorossing Industrial Ethernet status LED RS 485 Transmission rate, max. PROFIsafe Number of connections, max. Number of connections reserved for ES/HMI/web 	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
 Number of DP slaves, max. Services PG/OP communication Equidistance Isochronous mode Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autocrossing Industrial Ethernet status LED RS 485 Transmission rate, max. PROFIsafe Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces 	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
 Number of DP slaves, max. Services PG/OP communication Equidistance Isochronous mode Activation/deactivation of DP slaves Interface types RJ 45 (Ethernet) 100 Mbps Autonegotiation Autorossing Industrial Ethernet status LED RS 485 Transmission rate, max. PROFIsafe Number of connections, max. Number of connections reserved for ES/HMI/web 	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes

• 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 	Yes
• User data per job, max.	See online help (S7 communication, user data size)
Open IE communication	
• TCP/IP	Yes
— Data length, max.	64 kbyte
— several passive connections per port,	Yes
supported	
 ISO-on-TCP (RFC1006) 	Yes
— Data length, max.	64 kbyte
• UDP	Yes
— Data length, max.	2 kbyte; 1 472 bytes for UDP broadcast
— UDP multicast	Yes; Max. 5 multicast circuits
• DHCP	Yes
• DNS	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Encryption	Yes; Optional
Web server	
Web Server	
• HTTP	Yes; Standard and user pages
	Yes; Standard and user pages Yes; Standard and user pages
• HTTP	
• HTTP • HTTPS	
HTTP HTTPS OPC UA	Yes; Standard and user pages
HTTP HTTPS OPC UA Runtime license required	Yes; Standard and user pages Yes; "Medium" license required
HTTP HTTPS OPC UA Runtime license required OPC UA Client	Yes; Standard and user pages Yes; "Medium" license required Yes; Data Access (registered Read/Write), Method Call
HTTP HTTPS OPC UA Runtime license required OPC UA Client — Application authentication	Yes; Standard and user pages Yes; "Medium" license required Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15,
HTTP HTTPS OPC UA Runtime license required OPC UA Client — Application authentication — Security policies	Yes; Standard and user pages Yes; "Medium" license required Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
HTTP HTTPS OPC UA Runtime license required OPC UA Client — Application authentication — Security policies — User authentication	Yes; Standard and user pages Yes; "Medium" license required Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password
 HTTP HTTPS OPC UA Runtime license required OPC UA Client Application authentication Security policies User authentication Number of connections, max. Number of nodes of the client interfaces, recommended max. Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C 	Yes; Standard and user pages Yes; "Medium" license required Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10
 HTTP HTTPS OPC UA Runtime license required OPC UA Client Application authentication Security policies User authentication Number of connections, max. Number of nodes of the client interfaces, recommended max. Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C max. Number of elements for one call of 	Yes; Standard and user pages Yes; "Medium" license required Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 2 000
 HTTP HTTPS OPC UA Runtime license required OPC UA Client Application authentication Security policies User authentication Number of connections, max. Number of nodes of the client interfaces, 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 	Yes; Standard and user pages Yes; "Medium" license required Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 2 000 300
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 HTTP HTTPS OPC UA Runtime license required OPC UA Client Application authentication Security policies User authentication Number of connections, max. Number of nodes of the client interfaces, 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 method calls of OPC_UA_MethodCall, max. Number of inputs/outputs when calling OPC_UA_MethodCall, max. 	Yes; Standard and user pages Yes; "Medium" license required Yes; Data Access (registered Read/Write), Method Call Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 2 000 300 20 10 5 5 000 100 20 Yes; Data Access (Read, Write, Subscribe), Method Call, Alarms &

 User authentication 	"anonymous" or by user name & password
 — GDS support (certificate management) 	Yes
— Number of sessions, max.	48
— Number of accessible variables, max.	100 000
 Number of registerable nodes, max. 	20 000
 Number of subscriptions per session, max. 	50
 — Sampling interval, min. 	100 ms
 Publishing interval, min. 	100 ms
 Number of server methods, max. 	50
 — Number of inputs/outputs per server method, 	20
max.	
 Number of monitored items, recommended 	4 000; for 1 s sampling interval and 1 s send interval
max.	
 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 	30 000
interfaces, max.	00000
Alarms and Conditions	Yes
— Number of program alarms	200
 — Number of alarms for system diagnostics 	100
Further protocols	
MODBUS	Yes; MODBUS TCP
Isochronous mode	
Equidistance	Yes
S7 message functions	
Number of login stations for message functions, max.	64
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.	5 000
Number of simultaneously active program alarms	
 Number of program alarms 	1 000
Number of alarms for system diagnostics	200
Number of alarms for motion technology objects	
	480
5, ,	
Test commissioning functions	
5, ,	Yes; Parallel online access possible for up to 8 engineering systems
Test commissioning functions	Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients)
Test commissioning functions Joint commission (Team Engineering) Status block	Yes; Up to 8 simultaneously (in total across all ES clients)
Test commissioning functions Joint commission (Team Engineering) Status block Single step	Yes; Up to 8 simultaneously (in total across all ES clients) No
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints	Yes; Up to 8 simultaneously (in total across all ES clients)
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control	Yes; Up to 8 simultaneously (in total across all ES clients) No 8
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables	Yes; Up to 8 simultaneously (in total across all ES clients) No 8
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max.	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max.	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control Status/control variable Variables Number of variables, max. — of which status variables, max.	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which particular variables, max. — of which control variables, max.	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which status variables, max. Forcing • Forcing, variables	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing • Forcing, variables • Number of variables, max.	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing • Forcing, variables • Number of variables, max.	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing, variables • Number of variables, max.	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job 200; per job Yes Peripheral inputs/outputs 200
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max.	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Diagnostic buffer • present • Number of entries, max. — of which powerfail-proof	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job 200; per job Yes Peripheral inputs/outputs 200
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — of which powerfail-proof	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Diagnostic buffer • present • Number of entries, max. — of which powerfail-proof	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — of which powerfail-proof	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — of which powerfail-proof Traces • Number of configurable Traces	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing • Forcing • Forcing • Forcing • Forcing • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — of which powerfail-proof Traces • Number of configurable Traces Interrupts/diagnostics/status information Diagnostics indication LED	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4; Up to 512 KB of data per trace are possible
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. — of which control variables, max. Forcing • Forcing • Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. — of which powerfail-proof Traces • Number of configurable Traces Interrupts/diagnostics/status information Diagnostics indication LED • RUN/STOP LED	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4; Up to 512 KB of data per trace are possible
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Diagnostic buffer • present • Number of entries, max. — of which powerfail-proof Traces • Number of configurable Traces Interrupts/diagnostics/status information Diagnostics indication LED • RUN/STOP LED • ERROR LED	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4; Up to 512 KB of data per trace are possible Yes
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. - of which status variables, max. - of which control variables, max. - of which control variables, max. - of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. of which powerfail-proof Traces • Number of configurable Traces Interrupts/diagnostics/status information Diagnostics indication LED • RUN/STOP LED • ERROR LED • MAINT LED	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4; Up to 512 KB of data per trace are possible Yes Yes Yes
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Diagnostic buffer • present • Number of entries, max. — of which powerfail-proof Traces • Number of configurable Traces Interrupts/diagnostics/status information Diagnostics indication LED • RUN/STOP LED • ERROR LED	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4; Up to 512 KB of data per trace are possible Yes
Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. - of which status variables, max. - of which control variables, max. - of which control variables, max. - of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. of which powerfail-proof Traces • Number of configurable Traces Interrupts/diagnostics/status information Diagnostics indication LED • RUN/STOP LED • ERROR LED • MAINT LED	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4; Up to 512 KB of data per trace are possible Yes Yes Yes
Test commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. - of which status variables, max. - of which control variables, max. - of variables • Number of variables, max. - of variables, max. - of which powerfail-proof Traces • Number of configurable Traces Interrupts/diagnostics/status information Diagnostics indication LED • RUN/STOP LED • ERROR LED • MAINT LED • Connection display LINK TX/RX Supported technology objects	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4; Up to 512 KB of data per trace are possible Yes Yes Yes Yes Yes
Test commission (Team Engineering) Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. - of which status variables, max. - of which control variables, max. - of which control variables, max. - of which control variables, max. Forcing • Forcing • Forcing, variables • Number of variables, max. Diagnostic buffer • present • Number of entries, max. - of which powerfail-proof Traces • Number of configurable Traces Interrupts/diagnostics/status information Diagnostics indication LED • RUN/STOP LED • ERROR LED • MAINT LED • Connection display LINK TX/RX	Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters 200; per job 200; per job 200; per job Yes Peripheral inputs/outputs 200 Yes 3 200 500 4; Up to 512 KB of data per trace are possible Yes Yes Yes

 Number of available Motion Control resources for 	6 400	
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	
	40	
— per probe		
 Number of available Extended Motion Control resources for technology objects 	192	
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 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	55	
cycle of 4 ms (typical value)	55	
— Number of positioning axes at motion control	80	
cycle of 8 ms (typical value)	00	
Controller		
	Veer Universel DID controller with integrated antimization	
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	
Ambient conditions		
Ambient conditions		
Ambient conditions Ambient temperature during operation	0 °C	
Ambient conditions Ambient temperature during operation • horizontal installation, min.	0 °C	
Ambient conditions Ambient temperature during operation	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the	
Ambient conditions Ambient temperature during operation	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min.	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C	
Ambient conditions Ambient temperature during operation	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max.	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. • min.	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation • min. • max.	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. • vertical installation, max. • min. • max. Altitude during operation relating to sea level	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation • min. • max.	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. • vertical installation, max. • min. • max. Altitude during operation relating to sea level	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header configuration / programming / header	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header configuration / programming / header Programming language	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header Programming language — LAD	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual Yes	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header Programming language - LAD - FBD	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header Programming language - LAD - FBD - STL	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header Programming language - LAD - FBD - STL - SCL	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header Programming language - LAD - FBD - STL - SCL - GRAPH	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header configuration / programming / header Programming language - LAD - FBD - STL - SCL - GRAPH Know-how protection	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual Yes Yes Yes Yes Yes Yes	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header Programming language - LAD - FBD - STL - SCL - GRAPH	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header configuration / programming / header Programming language - LAD - FBD - STL - SCL - GRAPH Know-how protection	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual Yes Yes Yes Yes Yes Yes	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header configuration / programming / header Programming language - LAD - FBD - STL - SCL - GRAPH Know-how protection • User program protection/password protection	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header Programming language - LAD - FBD - STL - SCL - GRAPH Know-how protection • User program protection/password protection • Copy protection	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header Programming language - LAD - FBD - STL - SCL - GRAPH Know-how protection • User program protection/password protection • Block protection	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header Programming language - LAD - FBD - STL - SCL - GRAPH Know-how protection • User program protection/password protection • Block protection • Block protection • protection of confidential configuration data	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual Yes Yes Yes Yes Yes Yes Yes Yes	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header Programming language - LAD - FBD - STL - SCL - GRAPH Know-how protection • User program protection/password protection • Block protection • Block protection • Protection of confidential configuration data • Password for display	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye	
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Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. Ambient temperature during storage/transportation • min. • max. Altitude during operation relating to sea level • Installation altitude above sea level, max. configuration / header Programming language - LAD - FBD - STL - SCL - GRAPH Know-how protection • User program protection/password protection • Block protection • Protection of confidential configuration data • Password for display • Protection level: Write protection • Protection level: Write protection	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off -40 °C 70 °C 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes	
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 lower limit upper limit	adjustable minimum cycle time adjustable maximum cycle time
Dimensions	
Width	175 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	1 929 g

last modified:

11/24/2022 🖸