SIEMENS

Data sheet

6ES7510-1SJ01-0AB0



SIMATIC DP, CPU 1510SP F-1 PN for ET 200SP, Central processing unit with Work memory 150 KB for program and 750 KB for data, 1st interface: PROFINET IRT with 3-port switch, 72 ns bit performance, SIMATIC Memory Card required, BusAdapter required for Port 1 and 2

General information	
Product type designation	CPU 1510SP F-1 PN
HW functional status	FS05
Firmware version	V2.9
Product function	
 I&M data 	Yes; I&M0 to I&M3
 Module swapping during operation (hot swapping) 	Yes; Multi-hot swapping
 Isochronous mode 	Yes; Only with PROFINET; with minimum OB 6x cycle of 625 µs
Engineering with	
 STEP 7 TIA Portal configurable/integrated from version 	V17 (FW V2.9) / V13 SP1 Update 4 (FW V1.8) or higher
Configuration control	
via dataset	Yes
Control elements	
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
Input current	
Current consumption (rated value)	0.6 A
Current consumption, max.	0.9 A
Inrush current, max.	4.7 A; Rated value
l²t	0.14 A ^{2.} s
Power	
Infeed power to the backplane bus	8.75 W
Power loss	
Power loss, typ.	5.6 W
Memory	
Number of slots for SIMATIC memory card	1
SIMATIC memory card required	Yes
Work memory	
 integrated (for program) 	150 kbyte
 integrated (for data) 	750 kbyte
Load memory	
 Plug-in (SIMATIC Memory Card), max. 	32 Gbyte
Backup	

 maintenance-free 	Yes
CPU processing times	
for bit operations, typ.	72 ns
for word operations, typ.	86 ns
for fixed point arithmetic, typ.	115 ns
for floating point arithmetic, typ.	461 ns
CPU-blocks	
Number of elements (total)	4 000; Blocks (OB, FB, FC, DB) and UDTs
DB	
Number range	1 60 999; subdivided into: number range that can be used by the
	user: 1 59 999, and number range of DBs created via SFC 86: 60 000
	60 999
• Size, max.	750 kbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	0
Number range	065535
• Size, max.	100 kbyte
FC	0 65 525
 Number range Size, max. 	0 65 535 100 kbyte
OB	TOO KDyte
• Size, max.	150 kbyte
Number of free cycle OBs	100
Number of time alarm OBs	20
Number of delay alarm OBs	20
Number of cyclic interrupt OBs	20; With Failsafe, two RTGs with one "Cyclic interrupt OB" or one "Free
	cycle OB" (F-OB) each are possible
 Number of process alarm OBs 	50
 Number of DPV1 alarm OBs 	3
 Number of isochronous mode OBs 	1
 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	24; Up to 8 possible for F-blocks
 per priority class 	
Counters, timers and their retentivity	
S7 counter	
S7 counter • Number	2 048
S7 counter • Number Retentivity	2 048
S7 counter • Number Retentivity — adjustable	
S7 counter • Number Retentivity — adjustable IEC counter	2 048 Yes
S7 counter • Number Retentivity — adjustable IEC counter • Number	2 048
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S7 counter • Number Retentivity adjustable IEC counter • Number Retentivity adjustable S7 times • Number Retentivity adjustable IEC timer • Number Retentivity adjustable IEC timer • Number Retentivity adjustable Data areas and their retentivity	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 128 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 88 KB
S7 counter • Number Retentivity adjustable IEC counter • Number Retentivity adjustable S7 times • Number Retentivity adjustable IEC times • Number Retentivity adjustable IEC timer • Number Retentivity adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max.	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 128 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 88 KB 16 kbyte
S7 counter • Number Retentivity adjustable IEC counter • Number Retentivity adjustable S7 times • Number Retentivity adjustable IEC times • Number Retentivity adjustable IEC timer • Number Retentivity adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max. • Number of clock memories	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 128 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 88 KB
S7 counter • Number Retentivity adjustable IEC counter • Number Retentivity adjustable S7 times • Number Retentivity adjustable S7 times • Number Retentivity adjustable IEC timer • Number Retentivity adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max. • Number of clock memories Data blocks	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 128 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 88 KB 16 kbyte 8; 8 clock memory bit, grouped into one clock memory byte
S7 counter • Number Retentivity adjustable IEC counter • Number Retentivity adjustable S7 times • Number Retentivity adjustable IEC times • Number Retentivity adjustable IEC timer • Number Retentivity adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max. • Number of clock memories Data blocks • Retentivity adjustable	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 128 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 88 KB 16 kbyte 8; 8 clock memory bit, grouped into one clock memory byte Yes
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Address area	
Number of IO modules	1 024; max. number of modules / submodules
I/O address area	
Inputs	32 kbyte; All inputs are in the process image
Outputs	32 kbyte; All outputs are in the process image
per integrated IO subsystem	
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
per CM/CP	
– Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
Subprocess images	
 Number of subprocess images, max. 	32
Address space per module	
 Address space per module, max. 	288 byte; For input and output data respectively
Address space per station	
 Address space per station, max. 	2 560 byte; for central inputs and outputs; depending on configuration; 2
· ····· ··· ··· ··· ··· ··· ··· ··· ··	048 bytes for ET 200SP modules + 512 bytes for ET 200AL modules
Hardware configuration	
Number of distributed IO systems	32; A distributed I/O system is characterized not only by the integration
	of distributed I/O via PROFINET or PROFIBUS communication modules, but also by the connection of I/O via AS-i master modules or links (e.g. IE/PB-Link)
Number of DP masters	
• Via CM	1
Number of IO Controllers	
• integrated	1
• Via CM	0
Rack	
 Modules per rack, max. 	80; CPU + 64 modules + server module (mounting width max. 1 m) + 16 ET 200AL modules
- Questity of energhie FT 2000D modules, may	64
Quantity of operable ET 200SP modules, max.	
 Quantity of operable ET 200AL modules, max. Number of lines, max. 	16 1
PtP CM	1
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: Via CM DP module
• to DP, slave	Yes: Via CM DP module
• in AS, master	Yes
• in AS, slave	Yes
• on Ethernet via NTP	Yes
Interfaces	
	4
Number of PROFINET interfaces	1 1: Via CM DD module
Number of PROFIBUS interfaces	1; Via CM DP module
Optical interface	No
1. Interface	
Interface types	
RJ 45 (Ethernet)	Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45
Number of ports	3; 1. integr. + 2. via BusAdapter
 integrated switch 	Yes
 BusAdapter (PROFINET) 	Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12
Protocols	
IP protocol	Yes; IPv4
PROFINET IO Controller	Yes

Products 110 Denide Provides Provide Provides Provide Pr	PROFINET IO Dovino	Yes
Open IE communication Yes, Optionally also encrypted Yes, MRP Automanager according to IEC 62439-2 Edition 2.0 PROFINET IC Controller ProfOr Early ProfOr Early Controller ProfOr Early Pr	PROFINET IO Device SIMATIC communication	
Web server PGOP communication Yes Services PGOP communication Yes Services Web server PGOP communication Yes Services Web server PGOP communication Yes Services Web server Web server Yes Services Yes Services Yes Services Web server Yes Services Yes Services Web server Yes Services Web Service Yes Services Services Yes Services		
Hedia redundancy Yes, MRP Automanager according to IEC 62439-2 Edition 2.0 PROFINET IC Controller Services Hedra redundancy Yes, MRP Automanager according to IEC 62439-2 Edition 2.0 Yes PROFINET IC Controller Profice Communication Yes Profice Communication Yes Profice Communication Yes PROFILE I devices that an the Number of connectable IO Devices, max. Profile Information Yes Profile I devices Profile I devices Yes Y		
PPOPIDET IO Controller Services - PGOP communication Yes - Borchorous mode Yes - Direct data exchange Yes, Requirement: IRT and isochronous mode (MRPD optional) - HAT Yes, Per user program - PROFIlenergy Yes, Yes, Requirement: IRT and isochronous mode (MRPD optional) - HAT Yes, Per user program - Number of connectable IO Devices, max. 64 - Of which IO devices that can be simultaneously activate/disactivated, max. 64 - Number of IO Devices that can be simultaneously activate/disactivated, max. 64 - Updating times 64 Update time for IRT 64 - for send cycle of 500 µs 250 µs to 4 m; Note: In the case of IRT with isochronous on de, the minimum update time of 22 µs of the isochronous OB is decisive - for send cycle of 20 µs 250 µs to 4 m; Note: In the case of IRT with isochronous on de, the minimum update time of 02 µs of 4 m; Note: In the case of IRT with isochronous OB is decisive - for send cycle of 20 µs 250 µs to 28 ms - for send cycle of 20 µs 250 µs to 28 ms - for send cycle of 20 µs 250 µs to 28 ms - for send cycle of 20 µs 250 µs to 28 ms - for send cycle of 20 µs 250 µs to 28 ms		
Services Yes - PCOPC communication Yes - Direct Idea schange Yes - PROFemergy Yes - PROFinantgy Yes - PROFinantgy Yes - Prointized starup Yes - Or which ID devices starup Yes - Or which ID devices with IRT, max Fill Install, up to 256 distinuted ID devices can be connected via AS-I, the fill Install up to 256 distinuted ID devices can be connected via AS-I, the fill Install up to 256 distinuted ID devices can be connected via AS-I, the fill Install up to 256 distinuted ID devices can be connected via AS-I, the fill Install up to 256 distinuted ID devices can be connected via AS-I, the fill Install up to 256 distinuted ID devices can be connected via AS-I, the fill Install up to 256 distinuted ID devices can be communication of the workers that can be simultaneously advated/deacdivated, max. - Which In line, max. 64 - Wurber of IO Devices per tool, max. 8 - Updating times 100 devices per tool, max. - Updating times 250 up to 100 devices of 250 up to 100 devices, and on the quantity of configured user data - for send cycle of 250 up 250 up to 3 minimum value of the update time also depends on communication of tod's set of PRO-INCHONOUS OB is decivice - for send cycle of 250 up 250 up to 3 minimum value of the update time of OB decivice - for send cycle of 20 up 1 ms to 16 ms - for send cycle of 270 ms 2 ms to 16 ms <		Tes, MINE Automanager according to TEC 02435-2 Edition 2.0
PGOP communication PGOP communicatio		
		Yes
- Direct data exchange - Priorit data exchange - PROFInergy Yes, Requirement: IRT and isochronous mode (MRPD optional) Yes - PROFINERGY Yes, por user program - Prioritized startup - Of which In Une and connectable IO Devices, max. - Of which In Une arx. - Of which In Une max. - Number of CD Devices that can be simulation of the Devices per tool, max. - Number of ID Devices per tool, max. - Updating times - Of send cycle of 250 µs - for send cycle of 250 µs - for send cycle of 500 µ		
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PROFIBUS or PROFINET Of which 10 devices with IRT, max. Of which 10 devices with IRT, max. Of which 10 log-vices with IRT, max. Of which in line, max. Of which	— Prioritized startup	
 Number of connectable IO Devices for RT. max. of which in line, max. of which in line, max. of which in line, max. Number of IO Devices that can be simuliance/si advized/deactivate(max. Number of IO Devices per tool, max. Update time for IRT Update time for IRT for send cycle of 250 µs for send cycle of 250 µs for send cycle of 10 ms for send cycle of 250 µs for send cycle of 250 µs for send cycle of 10 ms for send cycle of 20 µs for send cycle of 10 ms <li< td=""><td>- Number of connectable IO Devices, max.</td><td></td></li<>	- Number of connectable IO Devices, max.	
max. 64 — Number of IO Devices that can be simultaneously activated/deactivated, max. 8 — Vunder of IO Devices per tool, max. 8 — Updating times 8 — Updating times 8 — Update time for IRT - — for send cycle of 250 µs 250 µs to 4 ms; Note: In the case of IRT with isochronus mode, the minimum update time of 825 µs of the isochronous OB is decisive — for send cycle of 250 µs 500 µs to 8 ms; Note: In the case of IRT with isochronus Mode, the minimum update time of 825 µs of the isochronous OB is decisive — for send cycle of 2 ms 1 ms to 18 ms — for send cycle of 2 ms 1 ms to 18 ms — for send cycle of 1 ms 1 ms to 18 ms — for send cycle of 2 ms 250 µs to 4 ms; Note: In the case of IRT with isochronous OB is decisive — for send cycle of 2 ms 1 ms to 32 ms — for send cycle of 4 ms 4 ms to 84 ms — for send cycle of 1 ms 1 ms to 12 ms — for send cycle of 250 µs 500 µs to 28 ms — for send cycle of 2 ms 250 µs to 128 ms — for send cycle of 1 ms 1 ms to 512 ms — for send cycle of 4 ms 2 ms to 512 ms — for send cy	 — Of which IO devices with IRT, max. 	64
	 — Number of connectable IO Devices for RT, 	64
	max.	
simultaneously activated/deactivated, max. 8 - Number of 10 Devices per tool, max. 8 - Updating times 8 Update time for IRT 7 - for send cycle of 250 µs 250 µs to 4 ms; Note: In the case of IRT with isochronous mode, the minimum update time of 625 µs of the isochronous OB is decisive - for send cycle of 500 µs 000 µs to 8 ms; Note: In the case of IRT with isochronous OB is decisive - for send cycle of 1 ms 1 ms to 16 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 2 ms 2 ms to 32 ms - for send cycle of 250 µs 250 µs to 128 ms - for send cycle of 250 µs 250 µs to 128 ms - for send cycle of 250 µs 250 µs to 128 ms - for send cycle of 250 µs 250 µs to 128 ms - for send cycle of 250 µs 20 µs to 128 ms - for send cycle of 1 ms 1 ms to 512 ms - for send cycle of 1 ms 1 ms to 512 ms - for send cycle of 1 ms 1 ms to 512 ms - for send cycle of 1 ms 1 ms to 512 ms - for send cycle of 1 ms 1 ms to 512 ms - for send cycle of 1 ms 1 ms to 512 ms <		64
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	— Updating times	share set for PROFINET IO, on the number of IO devices, and on the
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- for send cycle of 4 ms 4 ms to 64 ms - With IRT and parameterization of "odd" send Update time = set "odd" send clock (any multiple of 125 µs: 375 µs, 625 Update time for RT 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 - for send cycle of 4 ms 4 ms to 512 ms - for send cycle of 4 ms 4 ms to 512 ms - for send cycle of 4 ms 4 ms to 512 ms - for send cycle of 4 ms 4 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 - for send cycle of 2 ms 2 ms to 512 ms - for send cycle of 4 ms 4 ms to 512 ms - for send cycle of 4 ms 4 ms to 512 ms - BROFINET IO Device Yes - setvices - extracturation - setvices Yes - Number of IO Controllers with shared device, max. - extracturation of 1-devices - Asset management record Yes; per user program - Asset management record Yes; yis CM DP module	-	
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	· · ·	
- ruior communication Yes		Vec
	- PG/UP communication	res

— Equidistance	Νο
— Isochronous mode	No
 Activation/deactivation of DP slaves 	Yes
Interface types	
RJ 45 (Ethernet)	
• 100 Mbps	Yes
Autonegotiation	Yes
Autocrossing	Yes
 Industrial Ethernet status LED 	Yes
RS 485	
Transmission rate, max.	12 Mbit/s
Protocols	
PROFIsafe	Yes; V2.4 / V2.6
Number of connections	
 Number of connections, max. 	96; via integrated interfaces of the CPU and connected CPs / CMs
Number of connections reserved for ES/HMI/web	10
Number of connections via integrated interfaces	64
Number of connections per CP/CM	32
Number of S7 routing paths Redundancy mode	16
H-Sync forwarding	Yes
Media redundancy	
— Media redundancy	Yes; only via BusAdapter
— 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. Open IE communication	See online help (S7 communication, user data size)
• 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
	Yes
• LLDP	Yes
Encryption Web server	Yes; Optional
• HTTP	Yes; Standard and user pages
• HTTPS	Yes; Standard and user pages
OPC UA	
Runtime license required	Yes; "Small" license required
OPC UA Client	Yes
 Application authentication 	Yes
— Security policies	Available security policies: None, Basic128Rsa15, Basic256Rsa15,
	Basic256Sha256
— User authentication	"anonymous" or by user name & password
- Number of connections, max.	4
 Number of nodes of the client interfaces, 	1 000

recommended max.	
— Number of elements for one call of	300
OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C	500
max.	
- Number of elements for one call of	20
OPC_UA_NameSpaceGetIndexList, max.	
— Number of elements for one call of	100
OPC_UA_MethodGetHandleList, max.	4
 Number of simultaneous calls of the client instructions for session management, per 	1
connection, max.	
 — Number of simultaneous calls of the client 	5
instructions for data access, per connection, max.	
 Number of registerable nodes, max. 	5 000
— Number of registerable method calls of	100
OPC_UA_MethodCall, max. — Number of inputs/outputs when calling	20
OPC_UA_MethodCall, max.	20
• OPC UA Server	Yes; Data access (read, write, subscribe), method call, custom address
	space
 Application authentication 	Yes
- Security policies	Available security policies: None, Basic128Rsa15, Basic256Rsa15,
	Basic256Sha256
— User authentication	"anonymous" or by user name & password
 — GDS support (certificate management) 	Yes
 Number of sessions, max. 	32
 Number of accessible variables, max. 	50 000
 Number of registerable nodes, max. 	10 000 20
 Number of subscriptions per session, max. Sampling interval min 	20 100 ms
 — Sampling interval, min. — Publishing interval, min. 	500 ms
— Number of server methods, max.	20
 Number of server methods, max. Number of inputs/outputs per server method, 	20
max.	20
 — Number of monitored items, recommended 	1 000; 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 interfaces, max. 	1 000
Alarms and Conditions	Yes
— Number of program alarms	100
— Number of alarms for system diagnostics	50
Further protocols	
MODBUS	Yes; MODBUS TCP
S7 message functions	
Number of login stations for message functions, max.	32
Program alarms	Yes
Number of configurable program messages, max.	5 000; Program messages are generated by the "Program_Alarm"
с - _г с - <u>с - д - ,</u>	block, ProDiag or GRAPH
Number of loadable program messages in RUN, max.	2 500
Number of simultaneously active program alarms	
 Number of program alarms 	600
 Number of alarms for system diagnostics 	100
 Number of alarms for motion technology objects 	80
Test commissioning functions	
Joint commission (Team Engineering)	Yes; Parallel online access possible for up to 5 engineering systems
Status block	Yes; Up to 8 simultaneously (in total across all ES clients)
Single step	No
Number of breakpoints	8
Status/control	
Status/control variable	Yes; without fail-safe
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Number of variables, max.	
— of which status variables, max.	200; per job
— of which control variables, max.	200; per job

Forcing	
Forcing	Yes; without fail-safe
 Forcing Forcing, variables 	Peripheral inputs/outputs
 Forcing, variables Number of variables, max. 	200
Diagnostic buffer	200
present	Yes
Number of entries, max.	1 000
- of which powerfail-proof	500
Traces	
Number of configurable Traces	4; Up to 512 KB of data per trace are possible
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
 Monitoring of the supply voltage (PWR-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 	800
technology objects	
 Required Motion Control resources 	
— per speed-controlled axis	40
— per positioning axis	80
— per synchronous axis	160
— per external encoder	80
— per output cam	20
— per cam track	160
— per probe	40
 Positioning axis 	
 Number of positioning axes at motion control avela of 4 ma (turning) 	5
cycle of 4 ms (typical value)	10
 — Number of positioning axes at motion control cycle of 8 ms (typical value) 	10
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	
Highest safety class achievable in safety mode	
Performance level according to ISO 13849-1	PLe
SIL acc. to IEC 61508	SIL 3
Probability of failure (for service life of 20 years and repai	
— Low demand mode: PFDavg in accordance	< 2.00E-05
with SIL3	
- High demand/continuous mode: PFH in	< 1.00E-09
accordance with SIL3	
Ambient conditions	
Ambient temperature during operation	
horizontal installation, min.	-25 °C; No condensation
 horizontal installation, max. 	60 °C
 vertical installation, min. 	-25 °C; No condensation
 vertical installation, max. 	50 °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; incl. failsafe
— FBD	Yes; incl. failsafe
— STL	Yes

— SCL	Yes
— GRAPH	Yes
Know-how protection	
 User program protection/password protection 	Yes
Copy protection	Yes
 Block protection 	Yes
Access protection	
 protection of confidential configuration data 	Yes
 Protection level: Write protection 	Yes
 Protection level: Read/write protection 	Yes
 Protection level: Write protection for Failsafe 	Yes
 Protection level: Complete protection 	Yes
programming / cycle time monitoring / header	
lower limit	adjustable minimum cycle time
upper limit	adjustable maximum cycle time
Dimensions	
Width	100 mm
Height	117 mm
Depth	75 mm
Weights	
Weight, approx.	310 g
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