SIEMENS

Data sheet

6ES7514-2DN03-0AB0



SIMATIC DP, CPU 1514SP-2 PN for ET 200SP, central processing unit with work memory 600 KB for program and 3.5 MB for data, 1st interface: PROFINET IRT with 2-port switch, 2nd interface: PROFINET RT, 6 ns bit performance, SIMATIC Memory Card required, BusAdapter required for 1st interface

Figure similar

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General information	
Product type designation	CPU 1514SP-2 PN
HW functional status	FS01
Firmware version	V3.0
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 375 µs
Engineering with	
 STEP 7 TIA Portal configurable/integrated from version 	V18 (FW V3.0)
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 	10 ms
Input current	
Current consumption (rated value)	0.51 A
Current consumption, max.	0.7 A
Inrush current, max.	1.34 A; Rated value
l²t	0.3 A²-s
Power	
Infeed power to the backplane bus	8.05 W
Power loss	
Power loss, typ.	3.5 W
Memory	
Number of slots for SIMATIC memory card	1
SIMATIC memory card required	Yes
Work memory	
integrated (for program)	600 kbyte
• integrated (for data)	3.5 Mbyte
Load memory	
 Plug-in (SIMATIC Memory Card), max. 	32 Gbyte
Backup	

maintenance-free	Yes
CPU processing times	
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.	3.5 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	
Number range	0 65 535
• Size, max.	600 kbyte
FC	0.05505
Number range	0 65 535
• Size, max.	600 kbyte
OB	C00 lib. to
Size, max. Number of free evelo OPs	600 kbyte
Number of free cycle OBs	100
Number of time alarm OBs	20
Number of delay alarm OBs	20
Number of cyclic interrupt OBs	20; With minimum OB 3x cycle of 250 µs
 Number of process alarm OBs 	50
 Number of DPV1 alarm OBs 	3
 Number of isochronous mode OBs 	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	
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,
Flag	512 kbyte; In total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 472 KB
• Size, max.	
Size, max.Number of clock memories	counters, DBs, and technology data (axes): 472 KB
	counters, DBs, and technology data (axes): 472 KB 16 kbyte
Number of clock memories	counters, DBs, and technology data (axes): 472 KB 16 kbyte
Number of clock memories Data blocks	counters, DBs, and technology data (axes): 472 KB 16 kbyte 8; 8 clock memory bit, grouped into one clock memory byte

a ner priority class may	64 kbyte; max. 16 KB per block
per priority class, max. Address area.	OT KDYLE, IIIAX. TO KD PEL DIOCK
Address area	0.400
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
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	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	
• Via CM	1
Number of IO Controllers	
integrated	2
• Via CM	0
Rack	
• Modules per rack, max.	80; CPU + 64 modules + server module (mounting width max. 1 m) + 16 ET 200AL modules
 Quantity of operable ET 200SP modules, max. 	64
 Quantity of operable ET 200AL modules, max. 	16
 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; Via CM DP module
• on DP, device	Yes; Via CM DP module
• in AS, master	Yes
• in AS, device	Yes
on Ethernet via NTP	
	Yes
Interfaces	
Number of PROFINET interfaces	2
Number of PROFIBUS interfaces	1; Via CM DP module
Optical interface	No
1. Interface	
Interface types	
• RJ 45 (Ethernet)	Yes; X1 P1 and X1 P2 via BusAdapter BA 2x RJ45
 Number of ports 	2; via BusAdapter
• integrated switch	Yes
BusAdapter (PROFINET)	Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12
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 - PG/OP communication Yes Isochronous mode - Direct data exchange Yes; Requirement: IRT and isochronous mode (MRPD optional) - IRT Yes - PROFlenergy Yes; per user program Yes; Max. 32 PROFINET devices - Prioritized startup - 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. - Number of connectable IO Devices for RT, max. 256 - of which in line, max. 256 - 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 Update time for IRT $250~\mu s$ to 4 ms; Note: In the case of IRT with isochronous mode, the minimum — for send cycle of 250 µs 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 μ s ... 3 Update time for RT 250 µs to 128 ms — for send cycle of 250 μs - for send cycle of 500 μs 500 µs to 256 ms — for send cycle of 1 ms 1 ms to 512 ms - for send cycle of 2 ms 2 ms to 512 ms - for send cycle of 4 ms 4 ms to 512 ms **PROFINET IO Device** Services - PG/OP communication Yes - Isochronous mode No — IRT Yes — PROFlenergy Yes; per user program - Shared device Yes - Number of IO Controllers with shared device, max. activation/deactivation of I-devices Yes; per user program - Asset management record Yes; per user program Interface types • RJ 45 (Ethernet) Yes; X2 Number of ports 1 • integrated switch Nο Protocols Yes: IPv4 • IP protocol • PROFINET IO Controller Yes • PROFINET IO Device Yes Yes • SIMATIC communication • Open IE communication Yes; Optionally also encrypted

Web server	Yes
Media redundancy	No
PROFINET IO Controller	
Services	
— 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,
Number of connectable IO Devices for RT, max.	PROFIBUS or PROFINET 32
— of which in line, max.	32
,	8; in total across all interfaces
 Number of IO Devices that can be 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, max.	4
activation/deactivation of I-devices	Yes; per user program
Asset management record	Yes; per user program
3. Interface	res, per user program
Interface types	Vaca Via CM DD madula
• RS 485	Yes; Via CM DP module
Number of ports	1
Protocols	V
PROFIBUS DP master	Yes
PROFIBUS DP device	Yes
SIMATIC communication	Yes
PROFIBUS DP master	
Number of connections, max.	48; Of which 4 each reserved for ES and HMI
max. 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	
— PG/OP communication	Yes
— Equidistance	No
— Isochronous mode	No
— activation/deactivation of DP devices	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	No
Number of connections	
Number of connections, max.	192; via integrated interfaces of the CPU and connected CPs / CMs
- Hambor of Cormodiono, max.	102, 1.6 mogrator interreses of the of o and conflicted of 37 ones

 Number of connections reserved for ES/HMI/web 	10
 Number of connections via integrated interfaces 	128
 Number of connections per CP/CM 	32
 Number of S7 routing paths 	16
Redundancy mode	
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
<u> </u>	Yes
Data record routing S7 communication, as server.	Yes
S7 communication, as server S7 communication, as client.	
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, 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; max. 118 multicast circuits
• DHCP	Yes
• DNS	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Encryption	Yes; Optional
Web server	100, 00,000
• HTTP	Yes; Standard and user pages
• HTTPS	Yes; Standard and user pages
	res, Standard and user pages
OPC UA	Vac IIMadiumii laanaa yaguirad
Runtime license required	Yes; "Medium" license required
OPC UA Client Application puthon that in a	
	Yes; Data Access (registered Read/Write), Method Call
— Application authentication— Security policies	Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15,
— Security policies	Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
— Security policies— User authentication	Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password
 — Security policies — User authentication — Number of connections, max. — Number of nodes of the client interfaces, 	Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
— 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/OPC_I	Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 2 000 300
— 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/OPC_I max. — Number of elements for one call of	Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 2 000 300
— 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/OPC_I max.	Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 2 000 300
— 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/OPC_I max. — Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max. — Number of elements for one call of	Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 2 000 300
— 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/OPC_I 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,	Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 2 000 300 20 100
— 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/OPC_I max. — Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max. — Number of elements for one call of OPC_UA_MethodGetHandleList, max. — Number of simultaneous calls of the client instructions for session management, per connection, max. — Number of simultaneous calls of the client instructions for data access, per connection, max.	Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 2 000 300 20 100 1
— 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/OPC_U max. — Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max. — Number of elements for one call of OPC_UA_MethodGetHandleList, max. — Number of simultaneous calls of the client instructions for session management, per connection, max. — Number of simultaneous calls of the client	Yes Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 2 000 300 20 100 1

 Number of inputs/outputs when calling OPC_UA_MethodCall, max. 	20
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.	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, max.	20
Number of impuls/outputs per server method, max. Number of monitored items, recommended max.	4 000; for 1 s sampling interval and 1 s send interval
Number of server interfaces, max.	10 of each "Server interfaces" / "Companion specification" type and 20 of the
	type "Reference namespace" 30 000
 Number of nodes for user-defined server interfaces, max. 	00 000
Alarms and Conditions	Yes
Number of program alarms	200
Number of alarms for system diagnostics	100
Further protocols	
MODBUS	Yes; MODBUS TCP
S7 message functions	166, 1165566 161
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	4.000
Number of program alarms	1 000
Number of alarms for system diagnostics	200
Number of alarms for motion technology objects	160
Test commissioning functions	
Joint commission (Team Engineering)	Yes; Parallel online access possible for up to 8 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
 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
Forcing, variables	Peripheral inputs/outputs
Number of variables, max.	200
Diagnostic buffer	
• present	Yes
Number of entries, max.	3 200
— of which powerfail-proof	500
Traces	
Number of configurable Traces	4; Up to 512 KB of data per trace are possible
	4; Up to 512 KB of data per trace are possible
Number of configurable Traces Interrupts/diagnostics/status information	4; Up to 512 KB of data per trace are possible
Number of configurable Traces Interrupts/diagnostics/status information Diagnostics indication LED	
Number of configurable Traces Interrupts/diagnostics/status information	4; Up to 512 KB of data per trace are possible Yes Yes

*AlAINT LED		
*Connection displays LINK TORK *Notice Control *Number of available Motion Control resources for sectionagy objects *Required Motion Control resources for sectionagy objects *Required Motion Control resources - per specificating axis - per per positioning axis - per per cutor sam - per putor - Number of positioning axes at motion control cycle - Per sharing or per signification occurring control sample of sample	MAINT LED	Yes
Supported schnology objects Yes, Note: The number of technology objects affects the cycle time of the PLC program; seecton guide via the TIA Selection Tool 2 400	 Monitoring of the supply voltage (PWR-LED) 	Yes
Motion Control Number of available Motion Control resources for technology objects Required Motion Control resources for technology objects Required Motion Control resources - per speed controlled axis - per synthonous axis - per speed controlled axis - per speed controlled axis - per speed controlled axis - per speed axis axis axis axis axis axis axis axis	 Connection display LINK TX/RX 	Yes
Number of available Motion Control resources for technology objects Prequent Motion Control resources - per speed, controlled axis - per synchronous axis - per output cam - per cant track - per output cam - per cant track - per probe - Positioning axis - Number of positioning axes at motion control cycle of value of the speed of	Supported technology objects	
Number of available Motion Control resources for technology objects Required Motion Control resources — per peed controlled axis — per positioning axis — per output cem — per output cem — per output cem — per output cem — per probe - Positioning axis — Number of positioning axes at motion control cycle of a first (frycain value) — Number of positioning axes at motion control cycle of a first (frycain value) — Number of positioning axes at motion control cycle of a first (frycain value) — Number of positioning axes at motion control cycle of a first (frycain value) — Number of positioning axes at motion control cycle of a first (frycain value) — Number of positioning axes at motion control cycle of a first (frycain value) — Number of positioning axes at motion control cycle of a first (frycain value) — PID_Compact — PID_Compact — PID_Compact — PID_Step — Yes, PID controller with integrated optimization — PID_Step — Yes, PID controller with integrated optimization — PID_Compact — PID_Step — Yes, PID controller with integrated optimization — PID_Step — Yes, PID controller with integrated optimization — PID_Compact — PID	Motion Control	
technology objects - Required Motion Control resources - per speed-controlled axis - per synchronous axis - per synchronous axis - per output carm - per coutput carm - per cetternal encoder - per proble - Positioning axis - Number of positioning axes at motion control cycle of 8 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value) - PID_Compact - PID_Compact - PID_Compact - PID_Compact - PID		program; selection guide via the TIA Selection Tool
Pequined Motion Control resources — per specifications axis — per synchronous axis — per synchronous axis — per output cam — per contrack — per output cam — per grobe — per output cam — per grobe — per output cam — per grobe — Per grobe — Per grobe — Number of postiloning axis at motion control cycle of 4 ms (typical value) — Number of postiloning axis at motion control cycle of 8 ms (typical value) — Number of postiloning axis at motion control cycle of 8 ms (typical value) — Number of postiloning axis at motion control cycle of 8 ms (typical value) — Number of postiloning axis at motion control cycle of 8 ms (typical value) — Number of postiloning axis at motion control cycle of 8 ms (typical value) — Number of postiloning axis at motion control cycle of 8 ms (typical value) — Number of postiloning axis at motion control cycle of 8 ms (typical value) — Number of postiloning axis at motion control cycle of 8 ms (typical value) — Number of postiloning axis at motion control cycle of 8 ms (typical value) — Number of postiloning axis at motion control cycle of 9 ms (typical value) — Number of postiloning axis at motion control cycle of 9 ms (typical value) — Number of postiloning axis at motion control cycle of 9 ms (typical value) — Number of postiloning axis at motion control cycle of 9 ms (typical value) — Number of postiloning axis at motion control cycle of 9 ms (typical value) — Number of postiloning axis at motion control cycle of 9 ms (typical value) — Number of postiloning axis at motion control cycle of 9 ms (typical value) — Number of postiloning axis at motion control cycle of 9 ms (typical value) — Number of postiloning axis at motion control cycle of 9 ms (typical value) — Number of postiloning axis at motion control cycle of 9 ms (typical value)		2 400
— per speed-controlled axis		
- per positioning avis 80 160	•	40
- per synchronous axis		
- per output cam	• • •	
- per output cam - per can track - per probe - Positioning axis - Number of positioning axes at motion control cycle of 4 ms (typical value) - Number of positioning axes at motion control cycle of 4 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value) Controller - PID_Compact - PID_Compact - PID_Compact - PID_Compact - PID_Step - Yes, PID controller with integrated optimization for valves - PID-Temp - Yes, PID controller with integrated optimization for temperature Conting and measuring - High-speed counter - Yes - Ambient conditions Ambient temperature during operation - horizontal installation, min horizontal installation, min on orizontal installation, min vertical installation, min vertical installation, min on orizontal installation at the above sea level, max 50 °C; No condensation - installation attitude above sea level, max 50 °C; No condensation - PRD - STL - SCL - PSD - STL - SCL - Yes - STL - SCL - Yes - STL - SCL - Yes - GRAPH - Yes - STL - SCL - GRAPH - Yes - GRAPH - Yes - GRAPH - Yes - Copy protection - Ves - Protection level: With protection - Yes - Protection level: Complete protection - Yes - Protection level: Readwire protection - Yes - Protection level: Complete protection - Yes - Protection level: Complete protection - Yes - Protection level: Readwire protection - Yes - Protection level: Readwire protection - Yes - Protection level: Complete protection - Yes - Protection level: Readwire protection -		
- per cam track - per probe 40 - Postioning axis - Number of positioning axes at motion control cycle of Am (Nypical value) - Number of positioning axes at motion control cycle of Bm (Nypical value) - Number of positioning axes at motion control cycle of Bm (Nypical value) - Number of positioning axes at motion control cycle of Bm (Nypical value) - Number of positioning axes at motion control cycle of Bm (Nypical value) - Number of positioning axes at motion control cycle of Bm (Nypical value) - Number of positioning axes at motion control cycle of Bm (Nypical value) - Number of PiD_Stip - PiD_Compact - PiD_Compact - PiD_Compact - PiD_Compact - PiD_Stip - PiD_Sti	•	
- per probe Positioning axis - Number of positioning axes at motion control cycle of 4 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_Compact PID_Stsp PID_Controller with integrated optimization of valves PID_Stsp PID_Controller with integrated optimization for valves PID_Controller with integrated optimization for valves PID_Controller with integrated optimization for temperature Controller PID_Stsp PID_Controller with integrated optimization for temperature Controller PID_Controller with integrated optimization for temperature Controller PID_Controller with integrated optimization for temperature Controller with integrated optimization for temperature Controller with integrated optimization for valves PiD_Controller with integrated optimization for temperature Controller with integrated optimization for temperature PiD_Stsp PiD_Controller with integrated optimization for temperature PiD_Stsp PiD_Controller with integrated optimization for temperature PiD_Sts		
Positioning axis - Number of positioning axes at motion control cycle of 4 ms (typical value) - Number of positioning axes at motion control cycle of 4 ms (typical value) 20 20 20 20 20 20 20 20 20 20 20 20 20	•	
- Number of positioning axes at motion control cycle of a ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value) Controller • PID_Compact • PID_Compact • PID_Compact • PID_Step • PID_Temp Counting and measuring • PiD_Temp • Protection / max. Counting and measuring • PiD_Temp Counting and measuring PiD_Temp PiD_Temp Counting and measuring PiD_Temp Counting and me	— per probe	40
of 4 ms (typical value) — Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_Compact PID_Sistep Yes, PID controller with integrated optimization for valves PID_Sistep Yes, PID controller with integrated optimization for valves PID_Flemp Counting and measuring High-speed counter Yes Ambient conditions Ambient temperature during operation Notizontal installation, min. Notizontal installation, max. Perfical installation, min. So "C", No condensation Notizontal installation, max. Perfical installation, min. So "C" No condensation So "C" Altitude during operation relating to sea level Installation altitude above sea level, max. So "C" Configuration / header Configuration / header Programming language — LAD — FBD — STL — SCL — SCL — SCL — SCL — GRAPH — Yes — GRAPH — Yes — GRAPH — Yes — GRAPH — Yes — Copy protection Programmorection User program protection/password protection Protection for onlidential configuration data Protection level: Read/write protection Protection level: Read/write protection Protection level: Complete prote	· ·	
of 8 ms (typical value) Controller PID_Compact PID_Sistep PID_Temp Yes, PID controller with integrated optimization PID_Sistep PID_Temp Yes, PID controller with integrated optimization for valves PID_Temp Counting and measuring High-speed counter Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • vertical installation, max. • vertical installation, min. • vertical installatio		11
PID_Compact PID_Sistep PID_Temp Counting and measuring High-speed counter Abbient confidence in the protection is a protection of the pro		20
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 Ambient remperature during operation • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • vertical installation relating to sea level • Installation altitude above sea level, max. 50 °C Altitude during operation relating to sea level • Installation altitude above sea level, max. 500°C Configuration / header configuration / programming / header Programming language — LAD — FBD — STI. — SCI. — GRAPH Yes Know-how protection • User program protection/password protection • User program protection/password protection • User program protection/password protection • Protection for confidential configuration data • Protection level: Write protection • Yes • Protection level: Mindential configuration data • Protection level: Mindential configuration data • Protection level: Write protection • Yes • Protection level: Mindential configuration data • Protection l	Controller	
PID-Temp Counting and measuring High-speed counter Ambient conditions Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, min. • horizontal installation, max. • vertical installation max. • vertical installation altitude above sea level. • Installation altitude above sea level, max. 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual configuration / programming / header Programming language — LAD — FBD — Yes — STL — SCL — SCL — GRAPH — Yes Know-how protection • User program protection/password protection • User program protection/password protection • Block protection • Block protection • Block protection • Protection level: Write protection • Protection level: Complete protection • Protection level: Write protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Complete protection • Poper limit • upper limit • upper limit • upper limit • upper limit • dijustable maximum cycle time Dimensions Weight, approx. 265 g	PID_Compact	Yes; Universal PID controller with integrated optimization
Counting and measuring High-speed counter Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, min. vertical installation, min. vertical installation, min. vertical installation, max. vertical installation, max. vertical installation, max. vertical installation relating to sea level Installation altitude above sea level, max. 50 °C Altitude during operation relating to sea level Installation altitude above sea level, max. configuration / header configuration / header Programming language LAD Yes STL SCL Yes Protection (Appearance) Ves Protection (Appearance) Yes Scopy protection Protection (Appearance) Yes Protection level: Write protection Protection level: Write protection Protection level: Write protection Protection level: Write protection Protection level: Complete protection Protection level: Protection Protection leve	PID_3Step	Yes; PID controller with integrated optimization for valves
High-speed counter Ambient temperature during operation horizontal installation, min. horizontal installation, min. vertical installation, max. vertical installation, max. vertical installation, max. horizontal installation, max. vertical installation, max. vertical installation, max. Net trical installation, max. So °C No condensation vertical installation altitudes > 2 000 m, see manual contiguration / header configuration / programming / header Programming language — LAD — FBD — Yes — STL — Yes — STL — Yes — SCL — GRAPH — Yes Know-how protection • User program protection/password protection • User program protection/password protection • User program protection • User program protection Yes • Block protection Protection of confidential configuration data • Protection fevel: Write protection • Protection level: Write protection • Protection level: Write protection • Protection level: Complete protection • Protection level	PID-Temp	Yes; PID controller with integrated optimization for temperature
Ambient conditions Ambient memerature during operation • horizontal installation, min. • horizontal installation, min. • vertical installation, max. Altitude during operation relating to sea level • installation altitude above sea level, max. 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual configuration / header configuration / programming / header Programming language — LAD — FBD — STL — Yes — STL — Yes — SCL — GRAPH Yes Know-how protection • User program protection/password protection • User program protection/password protection • Slock protection • Slock protection • Protection level: Write protection • Protection level: Write protection • Protection level: Write protection • Protection level: Complete protection • Protection level: Read-write protecti	Counting and measuring	
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• horizontal installation, min. • horizontal installation, max. • vertical installation, max. Altitude during operation relating to sea level • Installation altitude above sea level, max. Configuration / header configuration / programming / header Programming language — LAD — FBD — Yes — STL — SCL — GRAPH Yes Know-how protection • User program protection/password protection • User program protection/password protection • User program protection Yes Access protection • Protection level: Write protection • Protection level: Write protection • Protection level: Complete protection • Protection level: Complete protection • Programming / header • lower limit • upper limit Dimensions Weight, approx. 265 g	Ambient conditions	
• horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. Altitude during operation relating to sea level • Installation altitude above sea level, max. • Installation altitude above sea level, max. • 1000 m; Restrictions for installation altitudes > 2 000 m, see manual • Configuration / header • configuration / programming / header Programming language • LAD • FBD • Yes • STL • SCL • SCL • GRAPH • Yes • SCL • GRAPH * Ves • Copy protection • User program protection/password protection • Slock protection • Protection of confidential configuration data • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection • Proter limit • upper limit • upper limit • upper limit • upper limit • peth **The maximum cycle time **Width **In mm Depth **The maximum of the maximum of time **Weight, approx. **E5 g	Ambient temperature during operation	
• vertical installation, min. • vertical installation, 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 — Yes Know-how protection • User program protection/password protection • Block protection • Discretion of confidential configuration data • Protection level: Write protection • Protection level: Read/write protection • Protection level: Read/write protection • Protection level: Complete protection • Protection level: Complete protection • Protestinon severe in the dijustable maximum cycle time • Loyer limit • Lopeth • Dimensions Width • 100 mm Height □ Depth • 75 mm Weight, approx. 2000 m; Restrictions for installation altitudes > 2 000 m, see manual 500 °C 50	 horizontal installation, min. 	-30 °C; No condensation
• vertical installation, 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 — Yes — GRAPH — Yes Know-how protection • User program protection/password protection • Block protection • Protection of confidential configuration data • Protection level: Write protection • Protection level: Read/write protection • Protection level: Read/write protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: International programming / cycle time monitoring / header • lower limit • upper limit • Uper limit • Dimensions Width • 100 mm Height □ 117 mm □ Depth □ 75 mm Weight, approx. 265 g	 horizontal installation, max. 	60 °C
Altitude during operation relating to sea level Installation altitude above sea level, max. configuration / header configuration / header Programming language - LAD - FBD - STL - SCL - GRAPH Yes Know-how protection User program protection/password protection Block protection Block protection Protection level: Write protection Protection level: Read/write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Protection level: Complete protection Protection level: Omplete protection Protection level: Machine monitoring / header Protections Protection level: Omplete protection Protection level	 vertical installation, min. 	-30 °C; No condensation
● Installation altitude above sea level, max. configuration / header configuration / programming / header Programming language	 vertical installation, max. 	50 °C
● Installation altitude above sea level, max. configuration / header configuration / programming / header Programming language	Altitude during operation relating to sea level	
configuration / programming / header Programming language — LAD — FBD Yes — STL Yes — SCL Yes — GRAPH Yes Know-how protection • User program protection/password protection • User program protection/password protection • Block protection • Protection for confidential configuration data • Protection level: Write protection • Protection level: Complete protection • Protection level: Transmitted protection • Prote	 Installation altitude above sea level, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
configuration / programming / header Programming language — LAD — FBD Yes — STL Yes — SCL Yes — GRAPH Yes Know-how protection • User program protection/password protection • User program protection/password protection • Block protection • Protection for confidential configuration data • Protection level: Write protection • Protection level: Complete protection • Protection level: Transmitted protection • Prote	configuration / header	
Programming language - LAD - FBD Yes - STL Yes - STL Yes - SCL Yes - GRAPH Yes Know-how protection • User program protection/password protection • User program protection • Protection • Protection • protection • protection fevel: Write protection • Protection level: Write protection • Protection level: Complete protection • Protection level: Complete protection • programming / cycle time monitoring / header • lower limit • upper limit • upper limit • upper limit Dimensions Width Height 117 mm Depth Veights Weight, approx. 265 g		
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FBD Yes 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: 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. 265 g		Ves
STL SCL GRAPH Yes Know-how protection • User program protection/password protection • Copy protection • Block protection • Protection of confidential configuration data • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Madder • I lower limit • upper lim		
SCL GRAPH Yes Know-how protection • User program protection/password protection • Copy protection • Block protection • protection of confidential configuration data • protection of confidential configuration data • Protection level: Write protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Dimensions Width • Upper limit • Upper lim		
Final Protection User program protection/password protection User program protection/password protection Copy protection Block protection Protection protection of confidential configuration data Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Programming / cycle time monitoring / header New Ilmit Upper limit Upper limit Upper limit Upper limit Depth T5 mm Weights Weight, approx. Pes Yes Access protection data Yes Yes Yes Yes Yes Access protection level: Write protection Yes Yes Access protection level: Complete protection Yes Yes Access protection level: Complete protection Yes Access protection level: Write protection Yes Access protection level: Write protection Yes Tes Tes Tes Tes Tes Tes Tes		
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Copy protection Block protection Yes Access protection protection of confidential configuration data Protection level: Write protection Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Programming / cycle time monitoring / header I lower limit Dimensions Width Dimensions Width Diepth T5 mm Weights Weight, approx. 265 g	·	Voc
Block protection Access protection protection of confidential configuration data Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Programming / cycle time monitoring / header I lower limit Upper limit		
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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. 265 g	•	
● 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. 265 g		Yes
● upper limit adjustable maximum cycle time Dimensions Width 100 mm Height 117 mm Depth 75 mm Weights Weight, approx. 265 g		
Dimensions Width 100 mm Height 117 mm Depth 75 mm Weights Weight, approx.		
Width 100 mm Height 117 mm Depth 75 mm Weights Weight, approx. 265 g	· ·	adjustable maximum cycle time
Height 117 mm Depth 75 mm Weights 265 g	Dimensions	
Depth 75 mm Weights 265 g	Width	100 mm
Weights Weight, approx. 265 g	Height	117 mm
Weight, approx. 265 g	Depth	75 mm
• • •	Weights	
last modified: 7/13/2024 🖸	Weight, approx.	•
	last modified:	7/13/2024 🖸

