SIEMENS

Data sheet

6ES7516-3FP03-0AB0



SIMATIC S7-1500F, CPU 1516F-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: PROFINET RT, 3rd interface: PROFIBUS, 6 ns bit performance, SIMATIC Memory Card required ****approvals and certificates according to entry 109817466 at support.industry.siemens.com to be considered! -

General information	
Product type designation	CPU 1516F-3 PN/DP
HW functional status	FS04
Firmware version	V4.0
 FW update possible 	Yes
Product function	
● I&M data	Yes; I&M0 to I&M3
• Isochronous mode	Yes; Distributed and central; with minimum OB 6x cycle of 375 μs (distributed) and 1 ms (central)
SysLog	Yes
Engineering with	
STEP 7 TIA Portal configurable/integrated from version	V20 (FW V4.0) / V18 (FW V3.0) or higher; configurable with older TIA Portal versions as 6ES7 516-3FN02-0AB0
Configuration control	
via dataset	Yes
Display	
Screen diagonal [cm]	6.1 cm
Control elements	
Number of keys	8
Mode buttons	2
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)	0.69 A
Current consumption, max.	1.08 A
Inrush current, max.	1.15 A; Rated value
l²t	0.6 A²·s
Power	
Infeed power to the backplane bus	12 W
Power consumption from the backplane bus (balanced)	6.7 W
Power loss	
Power loss, typ.	4 W
Memory	
Number of slots for SIMATIC memory card	1

SIMATIC memory card required	Yes
Work memory	
integrated (for program)	3 Mbyte
integrated (for data)	7.5 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	or no
	9 000: Placks (OR ER EC DR) and URTs
Number of elements (total) DB	8 000; Blocks (OB, FB, FC, DB) and UDTs
	4 CO COO subdivided into purchas some that are he used by the uses 4
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	
Number range	0 65 535
• Size, max.	1 Mbyte
FC	,
Number range	0 65 535
• Size, max.	1 Mbyte
• Size, Iliax.	1 May to
• Size, max.	1 Mbyte
	100
Number of free cycle OBs Number of time clarm OBs	
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; Up to 8 possible for F-blocks
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
— aujustable IEC timer	
• Number	Any (only limited by the main memory)
	Any (only limited by the main memory)
Retentivity	Von
— adjustable	Yes
Data areas and their retentivity	E40 librates in total considering and the second of the se
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
	Southers, 200, and toomingly data (anos). The Tib

Extended retentive data area (incl. timers, counters, flags), max.	7.5 Mbyte; When using PS 6 0W 24/48/60 V DC HF
Flag	
• Size, max.	16 kbyte
Number of clock memories	8; 8 clock memory bit, grouped into one clock memory byte
Data blocks	
 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	<u> </u>
	CA. A distributed I/O system is abspectarized not only by the integration of
Number of distributed IO systems	64; A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET or PROFIBUS communication modules, but also by the connection of I/O via AS-i master modules or links (e.g. IE/PB-Link)
Number of DP masters	
• integrated	1
• Via CM	8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total
Number of IO Controllers	
• integrated	2
• Via CM	8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total
Rack	
Modules per rack, max.	32; CPU + 31 modules
Number of lines, max.	1
PtP CM	
Number of PtP CMs	the number of connectable PtP CMs is only limited by the number of available slots
Time of day	
Clock	
• Type	Hardware clock
Backup time	6 wk; At 40 °C ambient temperature, typically
Deviation per day, max.	10 s; Typ.: 2 s
Operating hours counter	
Number	16
Clock synchronization	
• supported	Yes
• to DP, master	Yes
• on DP, device	Yes; via PROFIBUS CM / CP
• in AS, master	Yes
• in AS, device	Yes
• on Ethernet via NTP	Yes
Interfaces	
Number of PROFINET interfaces	2
Number of PROFIBUS interfaces	1
1. Interface	
Interface types	
• RJ 45 (Ethernet)	Yes; X1
Number of ports	2
• integrated switch	Yes
- integrated switch	100

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	Yes	
PROFINET IO Controller		
Services		
— 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 1024 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 simultaneously activated/deactivated, max. 	8; in total across all interfaces	
 Number of IO Devices per tool, max. 	8	
— Updating times	The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data	
— PROFINET Security Class	1	
Update time for IRT		
— for send cycle of 250 μs	$250~\mu s$ 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 μs : 375 μs , 625 μs 3 875 $\mu s)$	
Update time for RT		
— for send cycle of 250 μs	250 μs to 128 ms	
— for send cycle of 500 μs	500 μs to 256 ms	
— for send cycle of 1 ms	1 ms to 512 ms	
— for send cycle of 2 ms	2 ms to 512 ms	
— for send cycle of 4 ms	4 ms to 512 ms	
PROFINET IO Device		
Services		
— Isochronous mode	No	
— IRT	Yes	
— PROFlenergy	Yes; per user program	
Shared device	Yes	
Number of IO Controllers with shared device, max.	4	
— number of 10 controllers with shared device, max. — activation/deactivation of I-devices		
	Yes; per user program	
Asset management record PROFINET Sequenty Class	Yes; per user program	
— PROFINET Security Class	SNMP Configuration and DCP Read Only	
2. Interface		
Interface types	V V0	
• 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	
— 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 1024 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
Number of IO Devices that can be simultaneously	8; in total across all interfaces
activated/deactivated, max.	o, in total across an interfaces
 Number of IO Devices per tool, max. 	8
— Updating times	The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data
— PROFINET Security Class	1
Update time for RT	
— for send cycle of 1 ms	1 ms to 512 ms
PROFINET IO Device	
Services	
— 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
— PROFINET Security Class	SNMP Configuration and DCP Read Only
3. Interface	g
Interface types	
• RS 485	Yes; X3
Number of ports	1
Protocols	
PROFIBUS DP master	Yes
PROFIBUS DP device	No
SIMATIC communication	Yes
PROFIBUS DP master	100
Number of connections, max.	48; for the integrated PROFIBUS DP interface
max. number of DP devices	125; In total, up to 1 000 distributed I/O devices can be connected via AS-i,
THAN. HUMBER OF DE MEYICES	PROFIBUS or PROFINET
Services	
— Equidistance	Yes
— Isochronous mode	Yes
activation/deactivation of DP devices	Yes
Interface types	
RJ 45 (Ethernet)	
• 100 Mbps	Yes
Autonegotiation	Yes
Autoregonation Autorossing	Yes
Industrial Ethernet status LED	Yes
	100
RS 485	12 Mbit/s
• Transmission rate, max.	I Z VIUNIVO
Protocols	
DDOELf-	VV0 4 / V0 0
PROFIsafe	Yes; V2.4 / V2.6
PROFIsafe Number of connections • Number of connections, max.	Yes; V2.4 / V2.6 256; 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 	128	
 Number of S7 routing paths 	16	
Redundancy mode		
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, 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		
• HTTP	Yes; Standard and user pages	
• HTTPS	Yes; Standard and user pages	
• web API		
Number of sessions, max.	100	
 number of simultaneous HTTP calls, max. 	4	
— HTTP request body, max.	131 072 byte	
OPC UA		
Runtime license required	Yes; "Medium" license required	
OPC UA Client	Yes; Data Access (registered Read/Write), Method Call	
 Application authentication 	Yes	
— Security policies	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256	
 User authentication 	"anonymous" or by user name & password	
 Number of connections, max. 	10	
 Number of nodes of the client interfaces, recommended max. 	2 000	
 Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/OPC_I max. 	300	
 Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max. 	20	
Number of elements for one call of OPC_UA_MethodGetHandleList, max.	100	
 Number of simultaneous calls of the client instructions for session management, per connection, max. 	1	
 Number of simultaneous calls of the client instructions for data access, per connection, max. 	5	

Number of registerable nades, may	E 000		
Number of registerable nodes, max.	5 000		
 Number of registerable method calls of OPC_UA_MethodCall, max. 	100		
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, role-based access control		
 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; max. 20 concurrently running jobs each for asynchronous instructions OPC_UA_ServerMethodPre and OPC_UA_ServerMethodPost		
 Number of inputs/outputs per server method, max. 	20		
 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"		
 Number of nodes for user-defined server interfaces, max. 	30 000		
 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		
Equidiotarioo	100		
S7 message functions			
·	64		
S7 message functions			
S7 message functions Number of login stations for message functions, max.	64		
S7 message functions Number of login stations for message functions, max. number of subscriptions, max.	64 500		
S7 message functions Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max.	64 500 8 000		
S7 message functions Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block,		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max.	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max.	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms • Number of program alarms	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms • Number of program alarms • Number of alarms for system diagnostics	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering)	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients)		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times,		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control variable Variables	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times,		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control Status/control variable Variables Number of variables, max.	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control Status/control Number of variables, max. — of which status variables, max. — of which control variables, max.	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job 200; per job		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing Forcing	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job 200; per job Yes; without fail-safe		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms • Number of program alarms • Number of alarms for system diagnostics • Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing • Forcing • Forcing, variables	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job 200; per job Yes; without fail-safe peripheral inputs/outputs (without fail-safe)		
Number of login stations for message functions, max. number of subscriptions, max. number of tags/attributes for subscriptions, max. Program alarms Number of configurable program messages, max. Number of loadable program messages in RUN, max. Number of simultaneously active program alarms Number of program alarms Number of alarms for system diagnostics Number of alarms for motion technology objects Test commissioning functions Joint commission (Team Engineering) Status block Single step Number of breakpoints Profiling Status/control Status/control Status/control variable Variables Number of variables, max. — of which status variables, max. — of which control variables, max. Forcing Forcing	64 500 8 000 Yes 10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 10 000 1 000 200 160 Yes; Parallel online access possible for up to 8 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job 200; per job		

Number of contings, max. S200		
- of which powerfall proof Tiscess - Number of configurable Traces - Number of available Motion Control resources for technology objects - Requirement and section of the properties of the prop	• present	Yes
* Number of configuration Traces	 Number of entries, max. 	3 200
Multiple of configurable Traces Memory size per trace, max. 612 kbyte Interrupt exclanges six elections information Diagnostics elections information Diagnostics indication. LED *RENOR LED *RENOR LED *Top ACTIVE LED *	— of which powerfail-proof	500
Memory size per trace, max. 512 ktyre		
Interruptical ignoration (ED) - RUNNY TOP LED - REPROR LED - REPROR LED - REPROR LED - STOP ACTIVE LED - SUpported technology objects Molion Control - Number of available Motion Control resources for technology objects - Number of available Motion Control resources for technology objects - Port speech controlled axis - per speech controlled axis - per speech controlled axis - per output dam - per outp	<u> </u>	
Desponsizes indication LED RRNNSTOP LED RRNNSTOP LED RRNNSTOP LED Person ACTIVE LED Somection display LINK TXRX Yes Oconnection display LINK TXRX Yes Oconnection display LINK TXRX Yes What the control of available Miction Control resources for technology objects Required Miction Control resources for technology objects Required Miction Control resources for technology objects Per appead controlled axis Per speed controlled axis Per per positioning axis Per speed controlled axis Per per positioning axis Per specific may be accorded axis Per per positioning axis Per per positioning axis Probability of Spicial value) Probability of Spicial value) Controller PID_Compact PID_Compact PID_Temp Ves; Universal PID controller with integrated optimization for valves Yes; PID controller with integr		512 kbyte
RUNISTOP LED REPORT L		
RAINT LED MAINT LED Omnection display LINK TX/RX Supported technology objects Michina Control Number of available Motion Control resources for technology objects affects the cycle time of the PLC program; selection guide via the TIA Selection Tool 2 400 Required Motion Control resources for technology objects Required Motion Control resources for technology objects Required Motion Control resources — per speed-controlled axis — per positioning axis — per synchronous axis — per output cam — per output cam — per output cam — per an track — 160 — per probe — Real motioning axis — Number of positioning axis at motion control cycle — of A ms (typical value) Controller — Number of opsitioning axis at motion control cycle — of A ms (typical value) Controller — PID_Compact — PID_Compact — PID_Compact — PID_Step — PID_Tomp — Yes; PID controller with integrated optimization for valves — PID_Tomp Counting and measuring — High-speed counter — High-speed counter Subjects safely class ancheroable in safety mode — Performance level according to ISO 13849-1 — PID_Step — Probability for survive list in safety mode — Performance level according to ISO 13849-1 — Low demand mode: PFDavg in accordance with SL3 — High demandcontinuous mode: PFH in accordance with SL3 — High demandcontinuous mode: PFH in accordance with SL3 — High demandcontinuous mode: PFH in accordance with SL3 — PROFINET Security Class — Regioned Immarative during operation — horizontal installation, min. — horizontal installation, min. — horizontal installation, min. — vertical	Diagnostics indication LED	
NAMNT LED STOP ACTIVE LED Connection display LINK TX/RX Yes Supported technology objects Motion Control Number of available Motion Control resources for technology objects Required Motion Control resources for technology objects affects the cycle time of the PLC program; selection guide via the TIA Selection Tool 2 400 Number of available Motion Control resources for technology objects — per speed-controlled axis — per speed-controlled axis — per synchronous axis — per synchronous axis — per synchronous axis — per cant track — per probe 40 — per cant 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 8 ms (typical value) — Number of positioning axes at motion control cycle of 8 ms (typical value) — Pub Compact PID_Compact PID_Compact PID_Sistep Yes; Universal PID controller with integrated optimization Yes; PID controller with integrated optimization for temperature Countrilg and measuring High-speed counter Yes Standards, approvals, certificates Highest safety class achievable in safety mode Perdomance level according to ISO 13849-1 Sit. acc. to IEC 61608 Probability of faiture (for sexince life of 20 years and repair time of 100 hours) —Low demand mode: PFDarg in accordance with St.3 — High demandicontinuous mode: PFH in accordance with St.3 — High demandicontinuous mode: PFH in accordance with St.3 — High demandicontinuous mode: PFH in accordance with St.3 — High demandicontinuous mode: PFH in accordance with St.3 — High demandicontinuous mode: PFH in accordance with St.3 — High demandicontinuous mode: PFH in accordance with St.3 — Probability for faiture (for sexince life of 20 years and repair time of 100 hours) — Low demand mode: PFDarg in accordance with St.3 — Probability for faiture (for sexince life of 20 y	RUN/STOP LED	Yes
STOP ACTIVE LED Stopported technology objects Motion Control Number of available Motion Control resources for technology objects affects the cycle time of the PLC program; selection guide via the TIA Selection Tool 2 400 Required Motion Control resources for technology objects Required Motion Control resources for technology objects Required Motion Control resources - per speed-controlled axis - per synchronous axis - per synchronous axis - per output cam - per output cam - per probe - Postitioning 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) - 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) - PLD, Compact - PROFINET Secolary at a maximal repair with integrated optimization for valves - PLD, Temp - PROFINET Secolary as activable in safety mode - Performance level according to ISO 13849-1 - PLB - State act. Is EC 61509 - Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDarg in accordance with SL3 - PROFINET Secolary (class a chievable in safety mode - PROFINET Secolary (class a safety and the safety mode of C, Display. 50 °C, at an operating temperature of typically 50 °C, the display is switched off - Proton of C, Display. 50 °C, at an operating temperature of typically 50 °C, the display is switched off - Proton of C, Display. 40 °C, at an operating temperature of typically 50 °C, the display is switched off - Proton of C. On condensation		
Connection display LINK TXPXX Supported technology objects Motion Control Number of available Motion Control resources for technology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool 2 400 Number of available Motion Control resources for technology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool 2 400 Number of positioning axis — per synchronous axis — per external encoder — per output cam — per probe 40 Positioning axis — Number of positioning axes at motion control cycle of 4 ms (typical value) — Number of positioning axes at motion control cycle of 80 PROJECTION TYPE ACTION TO TABLE ACTION TABL		
Motion Control Number of available Motion Control resources for technology objects affects the cycle time of the PLC program, selection guide via the TLA Selection Tool 2 400 Required Motion Control resources Per speed-controlled axis Per synchronous axis Per synchronous axis Per anythornous axis Per controlled axis Per controlled axis Per per output cam Per per cubult cam Per per cubult cam Per probe Au Positioning axis Positi		
Motion Control Number of available Motion Control resources for technology objects Number of available Motion Control resources for technology objects Number of available Motion Control resources Per speed-controlled axis Per opationing axis Per synchronous axis Per opationing axis Per output cam Per output cam Per output cam Per or and track Per proble 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) Positioning axis Number of positioning axes at motion control cycle of 8 ms (typical value) Positioning axis Number of positioning axes at motion control cycle of 8 ms (typical value) PID_3Step PID_5Temp Counting and measuring Neg; PID controller with integrated optimization for valves PID_5Temp Counting and measuring Neg; PID controller with integrated optimization for temperature Counting and measuring Neg; PID controller with integrated optimization for temperature Counting and measuring Neg; PID controller with integrated optimization for temperature Piliph speed counter Standards, approvals, certificates Neglia controller of the PLC Yes Standards, approvals, certificates Neglia controller of the province with site of 20 years and repair time of 100 hours) Low demand moder. PFDavg in accordance with StL3 Probability of failure (for service life of 20 years and repair time of 100 hours) Low demand moder. PFDavg in accordance with StL3 Probability of failure (for service life of 20 years and repair time of 100 hours) Neglia controller with integrated optimization for temperature of typically 50 °C, the display is switched off Notice in the prevail of the province of typically 40 °C, the display is switched off Ambient temperature during operation Neticol installation, min. Netricol installation, max. Netrol installation, max. Netrol installation, society of C, at an operating temperature of typically 40 °C, the display is switched off Ambient temper	· ·	Yes
Number of available Motion Control resources for technology objects Required Motion Control resources — per speed-controlled axis — per speed-controlled axis — per synchronous axis — per custernal encoder — per output cam — per proble — Positioning axis — Number of positioning axes at motion control cycle of 4 ms (ypical value) — Number of positioning axes at motion control cycle of 4 ms (ypical value) Controller PID_Compact PID_Compact PID_Compact PID_Compact PID_Step PiD-Temp Yes; PID controller with integrated optimization for valves PID-Temp Yes; PID controller with integrated optimization for temperature Counting and measuring PHGP-Temp Yes; PID controller with integrated optimization for temperature Counting and measuring PHGP-Temp Yes; PID controller with integrated optimization for temperature Counting and measuring PHGP-Temp Yes; PID controller with integrated optimization for temperature Counting and measuring PHGP-Temp Yes; PID controller with integrated optimization for temperature Counting and measuring PHGP-Temp Yes; PID controller with integrated optimization for temperature 1 High-speed counter Yes 1 Standards, approvals, cortificates Standards, approvals, cortificates Standards, approvals, cortificates Standards, approvals, cortificates 1 Standards, approvals, cortificat		
technology objects Required Motion Control resources — per speed-controlled axis — per speed-controlled axis — per synchronous axis — per external encoder — per output cam — per probe — Per output cam — 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) — Number of positioning axes at motion control cycle of 8 ms (typical value) — Pull Compact — PID Compact		program; selection guide via the TIA Selection Tool
— per speed-controlled axis — per spositioning axis 80 — per synchronous axis 160 — per output cam 9 country cam 9		2 400
- per positioning axis - per synchronous axis - per external encoder - per output cam - per cam track - per probe - Positioning axis at motion control cycle of 4 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 8 ms (typical value) - Positioning axis at motion control cycle of 9 ms (typical value) - Positioning axis at motion control cycle of 9 ms (typical value) - Positioning axis at motion control cycle - Positioning axis at motion contr	 Required Motion Control resources 	
- per synchronous axis - per external encoder - per output cam - per cutput cam - per cutput cam - per probe - Postitioning 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) - 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) - 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) - 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) - 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_		
per external encoder per output cam per coutput cam per coutput cam per come track per probe 40 Postitioning 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) Controller PID_Compact PID_Compact PID_Sastep PID_Temp Yes; PID controller with integrated optimization PID_Temp 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 Stl. acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) Low demand mode: PFDavg in accordance with Stl. 3 High demand/continuous mode: PFH in accordance with Sil. 3 High demand/continuous mode: PFH in accordance with Sil. 3 PROFINET Security Class		
per cam track 160 per probe 40 • 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) 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) 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) Number of positioning axes at motion control cycle of 8 ms (typical value) Number of positioning axes at motion control cycle of 9 ms (typical value) Number of positioning axes at motion control cycle of 9 ms (typical value) Number of positioning axes at motion control cycle of 9 ms (typical value) Number of positioning axes at motion control cycle of 9 ms (typical value) Number of positioning axes at motion control cycle of 9 ms (typical value) Positioning at safety axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positioning axes at motion control cycle of 9 ms (typical value) Positionin		
- per cam track - per probe 40 - 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_Temp Counting and measuring • PID-Temp Counting and measuring • High-speed counter **Standards, approvals, certificates Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • Sil. acc. to IEC 61508 - Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDavg in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDavg in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDavg in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDavg in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/continuous mode: PFH in accordance with Sil. 3 - High demand/c	•	
- 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_Step PID_Temp 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 SIL acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDays in accordance with SIL3 Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDays in accordance with SIL3 Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDays in accordance with SIL3 Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDays in accordance with SIL3 Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDays in accordance with SIL3 Probability of failure (for service life of 20 years and repair time of 100 hours) - Yes safely removing data Yes - Yes - Samplent temperature during operation - horizontal installation, min horizontal installation, min horizontal installation, min horizontal installation, min vertical installation min		
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) Positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_Compact PID_Temp Yes; Universal PID controller with integrated optimization PID_3Step PID_Temp Yes; PID controller with integrated optimization for valves PID_Temp Yes; PID controller with integrated optimization for valves PID_Temp Yes; PID controller with integrated optimization for temperature Counting and measuring High-speed counter Standards, approvals, certificates Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL ac. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Product functions / security / header PROFINET Security Class safely removing data Ambient conditions Ambient display is switched off • vertical installation, min. • horizontal installation, min. • horizontal installation, min. • vertical installation, min. • nin. • vertical installation, min. • vertical installa	•	
- 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) Controller PID_Compact PID_Compact PID_Temp Yes; Universal PID controller with integrated optimization PID_Temp Yes; PID controller with integrated optimization for valves PID_Temp Yes; PID controller with integrated optimization for valves PID_Temp Counting and measuring High-speed counter Standards, approvals, certificates Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL ac. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDavg in accordance with SIL3 - High demand/continuous mode: PFH in accordance with SIL3 - High demand/continuous mode: PFH in accordance with SIL3 PROFINET Security / header PROFINET Security / header PROFINET Security Class safely removing data Ambient conditions Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • vertical installati		40
of 4 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value) Controller PID_Compact PID_Step PID_Temp Yes; Universal PID controller with integrated optimization PID_Step PID-Temp Yes; PID controller with integrated optimization for valves PID-Temp Counting and measuring High-speed counter Standards, approvals, certificates Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDavg in accordance with SIL3 - High demand/continuous mode: PFH in accordance with SIL3 - High demand/continuous mode: PFH in accordance with SIL3 PROFINET Security / header PROFINET Security / leader PROFINET Security class signed firmware update Secure Boot Secure Boot Ambient conditions Ambient conditions Ambient sinstallation, min. • horizontal installation, min. • horizontal installation, min. • vertical installation, min. • vertical installation, max. 40 °C; Display: 50 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation • min.	•	
Of 8 ms (typical value) Controller PID_Compact PID_Compact PID_Step PID_Temp PID_Step PID_Temp Pighspeed counter Performance level according to ISO 13849-1 Pils acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — PROFINET Security / header PROFINET Security Class Isigned firmware update Personance level according to ISO 3849-1 Personance level according to ISO 3849-1 Ple SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — Vecurious / security / header PROFINET Security Class I signed firmware update Yes Secure Boot Secure Boot Yes Safely removing data Ambient conditions Ambient temperature during operation • horizontal installation, min. • vertical installation, min. • vertical installation, min. • vertical installation, max. 40 °C, Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off Ambient temperature during storage/transportation • nin. • min. • max. 70 °C	of 4 ms (typical value)	
PID_Compact PID_Step PID_Temp Yes; PID controller with integrated optimization for valves PID_Temp Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for valves 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 SiL acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SiL3 — High demand/continuous mode: PFH in accordance with SiL3 Product functions / security / header PROFINET Security Class signed firmware update Yes Secure Boot Secure Boot Secure Boot Secure Boot Yes Safely removing data Ambient conditions Ambient temperature during operation Norizontal installation, min. Norizontal installation, max. O °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off Ambient temperature during storage/transportation Norizontal installation, max. Av °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation Norizontal installation, max.	of 8 ms (typical value)	20
PID_3Step PID_Temp Yes; PID controller with integrated optimization for valves PID-Temp Yes PID controller with integrated optimization for temperature Counting and measuring High-speed counter Pressure Standards, approvals, certificates Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 SIL 3 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Product functions / security / header PROFINET Security Class Secure Boot Secure Boot Secure Boot Yes Safety removing data Ambient conditions Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. 60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off • vertical installation, max. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation • min. • vertical installation, max. 70 °C		Very link and DID and allow with interested authorization
PID-Temp Yes; PID controller with integrated optimization for temperature Counting and measuring High-speed counter Standards, approvals, certificates Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) Low demand mode: PFDavg in accordance with SIL3 High demand/continuous mode: PFH in accordance with SIL3 High demand/continuous mode: PFH in accordance with SIL3 Product functions / security / header PROFINET Security Class 1 signed firmware update Yes Secure Boot Yes safely removing data Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. 60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off vertical installation, max. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation min. min. min. -40 °C		· · ·
Counting and measuring Ighip-speed counter Standards, approvals, certificates Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — PROFINET Security / header PROFINET Security Class signed firmware update Secure Boot Safely removing data Ambient conditions Ambient temperature during operation Indicate the properation of the prop		
High-speed counter Standards, approvals, certificates Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL ac. to IEC 61508 SIL a Probability of failure (for service life of 20 years and repair time of 100 hours) —Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — PROFINET Security / header PROFINET Security Class 1 signed firmware update Yes Secure Boot yes safely removing data Yes Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • vertical installation, min. • vertical installation, min. • vertical installation, max. 40 °C; No condensation • wertical installation, max. do °C; Display: 50 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation • min. • win. • max. 70 °C	·	res, FID controller with integrated optimization for temperature
Standards, approvals, certificates Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL ac. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Product functions / security / header PROFINET Security Class 1 signed firmware update Yes Secure Boot Yes Secure Boot Ambient conditions Ambient conditions Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • vertical installation, max. 40 °C; No condensation • vertical installation, max. Ambient temperature during storage/transportation • vertical installation, max. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation • min. • win. • max. 40 °C 70 °C		Vec
Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) Low demand mode: PFDavg in accordance with SIL3 High demand/continuous mode: PFH in accordance with SIL3 Product functions / security / header PROFINET Security / header PROFINET Security Class signed firmware update Yes Secure Boot Yes safely removing data Yes Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. 60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off vertical installation, max. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation min. min. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation min. 40 °C 70 °C		
Performance level according to ISO 13849-1 SIL acc. to IEC 61508 SIL 3 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 product functions / security / header PROFINET Security Class 1 signed firmware update Yes Secure Boot Yes Secure Boot Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, min. • vertical installation, min. • vertical installation, max. 40 °C; No condensation • vertical installation, max. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation • min. • min. • min. • min. • max. 40 °C 70 °C		
SIL acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 Product functions / security / header PROFINET Security Class signed firmware update Yes Secure Boot Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, min. • horizontal installation, min. • vertical installation, min. • vertical installation, max. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation • min. • min. • min. • max. 70 °C	·	Ple
Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3 product functions / security / header PROFINET Security Class signed firmware update Yes Secure Boot Secure Boot Secure Boot Yes Ambient conditions Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, min. • vertical installation, max. 40 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off Ambient temperature during storage/transportation • min. • min. • max. 70 °C	_	
Low demand mode: PFDavg in accordance with SIL3 High demand/continuous mode: PFH in accordance with SIL3 High demand/continuous mode: PFH in accordance with SIL3 product functions / security / header PROFINET Security Class signed firmware update Yes Secure Boot Yes Secure Boot Yes Ambient conditions Ambient temperature during operation horizontal installation, min horizontal installation, max 30 °C; No condensation vertical installation, min vertical installation, max 30 °C; No condensation vertical installation, max 30 °C; No condensation vertical installation, max 30 °C; No condensation 30 °C; No condensation vertical installation, max 30 °C; No condensation 30 °C; No conde		
product functions / security / header PROFINET Security Class signed firmware update Yes Secure Boot Safely removing data Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. 60 °C; No condensation horizontal installation, min. vertical installation, min. vertical installation, max. 40 °C; No condensation we retical installation, max. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation min. min. min. 40 °C 70 °C	Low demand mode: PFDavg in accordance with	
PROFINET Security Class signed firmware update Yes Secure Boot Ambient conditions Ambient temperature during operation horizontal installation, min. horizontal installation, max. overtical installation, min. vertical installation, max. vertical installation, max. for c; No condensation overtical installation, min. vertical installation, max. for c; No condensation overtical installation, min. vertical installation, max. for c; No condensation overtical installation, min. vertical installation, max. for c; No condensation overtical installation, max. for c; No condensation overtical installation, max. for c; No condensation overtical installation, max. for c; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation overtical installation, max. for c; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation overtical installation, max. for c; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off		< 1.00E-09
signed firmware update Secure Boot Yes Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • horizontal installation, min. • vertical installation, min. • vertical installation, max. • vertical install	product functions / security / header	
Secure Boot safely removing data Yes Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • horizontal installation, min. • vertical installation, min. • vertical installation, max.	PROFINET Security Class	1
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • horizontal installation, min. • vertical installation, min. • vertical installation, min. • vertical installation, max. •	signed firmware update	Yes
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • horizontal installation, max. • horizontal installation, max. • vertical installation, min. • vertical installation, min. • vertical installation, max. • vertical installation, ma	Secure Boot	Yes
Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, min. • vertical install	safely removing data	Yes
 horizontal installation, min. horizontal installation, max. 60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off vertical installation, min. vertical installation, max. Vertical installation, max. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation min. -40 °C max. 70 °C 	Ambient conditions	
 horizontal installation, max. 60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off vertical installation, min. vertical installation, max. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation min. -40 °C max. 70 °C 	Ambient temperature during operation	
 display is switched off vertical installation, min. vertical installation, max. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation min. -40 °C max. 70 °C 	 horizontal installation, min. 	-30 °C; No condensation
 vertical installation, max. 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off Ambient temperature during storage/transportation min. -40 °C max. 70 °C 	horizontal installation, max.	
display is switched off Ambient temperature during storage/transportation • min. • max. -40 °C 70 °C	 vertical installation, min. 	
 min. -40 °C max. 70 °C 	vertical installation, max.	40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off
• max. 70 °C	Ambient temperature during storage/transportation	
	• min.	-40 °C
Altitude during operation relating to sea level	● max.	70 °C
	Altitude during operation relating to sea level	

• Installation altitude above sea level, max.

5 000 m; Restrictions for installation altitudes > 2 000 m, see manual

cont	ficule	ation	/ ho	adar
COIII	ııyuı	alion	/ He	auei

configuration / programming / header

Programming language

— LAD

— FBD

— STL

— SCL

— CFC

— GRAPH

Yes; incl. failsafe Yes; incl. failsafe

Yes

Yes

Yes; either CFC or failsafe functionality

Yes

Know-how protection

• User program protection/password protection

Copy protection

Block protection

Yes Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

100

100

50

Access protection

• protection of confidential configuration data

Password for display

Protection level: Write protection

Protection level: Read/write protection

• Protection level: Write protection for Failsafe

• Protection level: Complete protection

User administration

Number of usersNumber of groups

Number of roles

programming / cycle time monitoring / header

• lower limit

• upper limit

adjustable minimum cycle time

Yes; device-wide and centralized

adjustable maximum cycle time

Dimensions

Width

Height Depth 70 mm 147 mm 129 mm

Weights

Weight, approx.

469 g

Classifications

	Version	Classification
eClass	14	27-24-22-07
eClass	12	27-24-22-07
eClass	9.1	27-24-22-07
eClass	9	27-24-22-07
eClass	8	27-24-22-07
eClass	7.1	27-24-22-07
eClass	6	27-24-22-07
ETIM	9	EC000236
ETIM	8	EC000236
ETIM	7	EC000236
IDEA	4	3565
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

Manufacturer Declaration Miscellaneous







Miscellaneous

General Product Approval

For use in hazardous locations



<u>KC</u>



<u>FM</u>



<u>FM</u>

For use in hazardous locations





Type Examination Cer-tificate



Miscellaneous

Type Examination Cer-tificate



Marine / Shipping









NK / Nippon Kaiji Ky-okai



Marine / Shipping

other

Environment

CCS (China Classification Society)



PROFINET



Siemens **EcoTech**





last modified:

4/1/2025

