6ES7516-3FN02-0AB0

## **Data sheet**



SIMATIC S7-1500F, CPU 1516F-3 PN/DP, central processing unit with 1.5 MB work memory for program and 5 MB for data, 1st interface: PROFINET IRT with 2-port switch, 2nd interface: PROFINET RT, 3rd interface: PROFIBUS, 10 ns bit performance, SIMATIC Memory Card required

General information	
Product type designation	CPU 1516F-3 PN/DP
HW functional status	FS01
Firmware version	V2.9
Product function	
I&M data	Yes; I&M0 to I&M3
Isochronous mode	Yes; Distributed and central; with minimum OB 6x cycle of 375 $\mu s$ (distributed) and 1 ms (central)
Engineering with	
STEP 7 TIA Portal configurable/integrated from version	V17 (FW V2.9) / V16 (FW V2.8) or higher; with older TIA Portal versions configurable as 6ES7516-3FN01-0AB0
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	
<ul> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
Repeat rate, min.	1/s
Input current	
Current consumption (rated value)	0.85 A
Current consumption, max.	1.1 A
Inrush current, max.	2.4 A; Rated value
l²t	0.02 A <sup>2</sup> ·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.	7 W
Memory	
Number of slots for SIMATIC memory card	1
SIMATIC memory card required	Yes

Warl, manager	
Work memory	1.5 Mbyto
• integrated (for program)	1.5 Mbyte
• integrated (for data)	5 Mbyte
Load memory	20 Chuto
Plug-in (SIMATIC Memory Card), max.  Packup	32 Gbyte
Backup     maintenance-free	Yes
1 11 1 11 11	165
CPU processing times	40
for bit operations, typ.	10 ns
for word operations, typ.	12 ns
for fixed point arithmetic, typ.	16 ns
for floating point arithmetic, typ.  CPU-blocks	64 ns
	0.000 Planks (OR ER EO PR) and URT-
Number of elements (total)  DB	8 000; Blocks (OB, FB, FC, DB) and UDTs
Number range	1 60 999; subdivided into: number range that can be used by the
g The state of the	user: 1 59 999, and number range of DBs created via SFC 86: 60 000 60 999
• Size, max.	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
ОВ	
• Size, max.	1 Mbyte
<ul> <li>Number of free cycle OBs</li> </ul>	100
<ul> <li>Number of time alarm OBs</li> </ul>	20
<ul> <li>Number of delay alarm OBs</li> </ul>	20
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	20; With minimum OB 3x cycle of 250 μs
<ul> <li>Number of process alarm OBs</li> </ul>	50
Number of DPV1 alarm OBs	3
<ul> <li>Number of isochronous mode OBs</li> </ul>	3
<ul> <li>Number of technology synchronous alarm OBs</li> </ul>	2
Number of startup OBs	100
<ul> <li>Number of asynchronous error OBs</li> </ul>	4
Number of synchronous error OBs	2
Number of diagnostic alarm OBs	1
Nesting depth	04 11 4 0 11 4 5 11 4
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	A / 1 P % 11 d
Number	Any (only limited by the main memory)
Retentivity	Voc
— adjustable	Yes
S7 times	2.040
Number  Patasticitus	2 048
Retentivity	Voc
— adjustable	Yes
IEC timer	Accordant limited by the accident
Number  Patentinity	Any (only limited by the main memory)
Retentivity	Voc
— adjustable	Yes
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	512 kbyte; In total; available retentive memory for bit memories, timers,

	counters, DBs, and technology data (axes): 472 KB
Extended retentive data area (incl. timers, counters, flags), max.	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	
<ul> <li>Retentivity adjustable</li> </ul>	Yes
Retentivity preset	No
Local data	
<ul> <li>per priority class, max.</li> </ul>	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)	
— Outputs (voidine)  Subprocess images	8 kbyte
Number of subprocess images, max.	32
<u> </u>	32
Hardware configuration	
Number of distributed IO systems	64; A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET or PROFIBUS communication modules, but also by the connection of I/O via AS-i master modules or links (e.g. IE/PB-Link)
Number of DP masters	
integrated	1
• Via CM	8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total
Number of IO Controllers	
<ul><li>integrated</li></ul>	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
ime 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
• in AS, master	Yes
• in AS, slave	Yes
on Ethernet via NTP  ptorfaces	Yes
nterfaces	2
Number of PROFINET interfaces	2
Number of PROFIBUS interfaces	1
I. Interface	
Interface types	

• RJ 45 (Ethernet)	Yes; X1
<ul><li>Number of ports</li></ul>	2
integrated switch	Yes
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      Media redundancy	Yes
Media redundancy     PROFINET IO Controller	Yes; MRP Automanager according to IEC 62439-2 Edition 2.0
Services	
— PG/OP communication	Yes
Isochronous mode	Yes
Direct data exchange	Yes; Requirement: IRT and isochronous mode (MRPD optional)
— IRT	Yes
— PROFlenergy	Yes; per user program
Prioritized startup	Yes; Max. 32 PROFINET devices
Number of connectable IO Devices, max.	256; In total, up to 1 000 distributed I/O devices can be connected via
	AS-i, PROFIBUS or PROFINET
<ul> <li>Of which IO devices with IRT, max.</li> </ul>	64
<ul> <li>Number of connectable IO Devices for RT,</li> </ul>	256
max.	050
— of which in line, max.	256
<ul> <li>Number of IO Devices that can be simultaneously activated/deactivated, max.</li> </ul>	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
Speeding and s	share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data
Update time for IRT	
— for send cycle of 250 μs	250 $\mu s$ to 4 ms; Note: In the case of IRT with isochronous mode, the minimum update time of 375 $\mu s$ 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
cycles Update time for RT	μs 3 875 μs)
— for send cycle of 250 µs	250 μs to 128 ms
— for send cycle of 200 μs	500 μs to 256 ms
— for send cycle of 1 ms	1 ms to 512 ms
— for send cycle of 1 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
<ul> <li>Number of IO Controllers with shared device, max.</li> </ul>	4
activation/deactivation of I-devices	Yes; per user program
Asset management record	Yes; per user program
2. Interface	1 63, per user program
Interface types • RJ 45 (Ethernet)	Yes; X2
Number of ports	1
integrated switch	No
- Integrated Switch	110

Protocolo	
Protocols	Veg IDvA
IP protocol     IP PROFINET IO Controller	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	
<ul><li>— PG/OP communication</li></ul>	Yes
<ul><li>— Isochronous mode</li></ul>	No
<ul> <li>Direct data exchange</li> </ul>	No
— IRT	No
— PROFlenergy	Yes; per user program
Prioritized startup	No
— Number of connectable IO Devices, max.	32; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET
<ul> <li>Number of connectable IO Devices for RT, max.</li> </ul>	32
— of which in line, max.	32
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
Update time for RT	quantity of ooinings, ou door data
— for send cycle of 1 ms	1 ms to 512 ms
PROFINET IO Device	1 1110 10 0 12 1110
Services	
— PG/OP communication	Yes
Isochronous mode	No
— IRT	No
— PROFlenergy	Yes; per user program
Prioritized startup	No
·	
— Shared device	Yes
<ul> <li>Number of IO Controllers with shared device, max.</li> </ul>	4
activation/deactivation of I-devices	Yes; per user program
Asset management record	Yes; per user program
3. Interface	166, por door program
Interface types	Vac. V2
• RS 485	Yes; X3
Number of ports	1
Protocols	V
PROFIBUS DP master	Yes
PROFIBUS DP slave	No
SIMATIC communication	Yes
Interface types	
RJ 45 (Ethernet)	
• 100 Mbps	Yes
<ul> <li>Autonegotiation</li> </ul>	Yes
Autocrossing	Yes
Industrial Ethernet status LED	Yes
RS 485	
Transmission rate, max.	12 Mbit/s
Protocols	
PROFIsafe	Yes; V2.4 / V2.6
Number of connections	
Number of connections, max.	256; via integrated interfaces of the CPU and connected CPs / CMs

Niverboard and the Community of the Comm	40
Number of connections reserved for ES/HMI/web	10
Number of connections via integrated interfaces	128
Number of S7 routing paths  Padvadancy routing	16
Redundancy mode	Voc
H-Sync forwarding  Media redundancy	Yes
Media redundancy	Vac: only via 1st interface (V1)
— Media redundancy — MRP	Yes; only via 1st interface (X1)
— WRP	Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client
<ul> <li>MRP interconnection, supported</li> </ul>	Yes; as MRP ring node according to IEC 62439-2 Edition 3.0
— MRPD	Yes; Requirement: IRT
<ul> <li>Switchover time on line break, typ.</li> </ul>	200 ms; For MRP, bumpless for MRPD
Number of stations in the ring, max.	50
SIMATIC communication	
<ul> <li>PG/OP communication</li> </ul>	Yes; encryption with TLS V1.3 pre-selected
• S7 routing	Yes
Data record routing	Yes
<ul> <li>S7 communication, as server</li> </ul>	Yes
<ul> <li>S7 communication, as client</li> </ul>	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
<ul> <li>several passive connections per port, supported</li> </ul>	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. 5 multicast circuits
• DHCP	Yes
• DNS	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
• Encryption	Yes; Optional
Web server	r co, Optional
• HTTP	Yes; Standard and user pages
• HTTPS	Yes; Standard and user pages
OPC UA	res, otanuaru anu user pages
Runtime license required	Yes
OPC UA Client	Yes
	Yes
<ul><li>— Application authentication</li><li>— Security policies</li></ul>	Available security policies: None, Basic128Rsa15, Basic256Rsa15,
,	Basic256Sha256
— User authentication	"anonymous" or by user name & password
<ul> <li>Number of connections, max.</li> </ul>	10
<ul> <li>Number of nodes of the client interfaces, max.</li> </ul>	2 000
<ul> <li>Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/Omax.</li> </ul>	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
<ul> <li>Number of simultaneous calls of the client instructions per connection (except OPC_UA_ReadList,OPC_UA_WriteList,OPC_UA_N max.</li> </ul>	1
Number of simultaneous calls of the client instructions	5
OPC_UA_ReadList,OPC_UA_WriteList and OPC_UA_MethodCall, max.	

- Number of registerable nodes, max OPC-UA_Methodical, max OPC-UA_Methodical, max OPC-UA_Methodical, max Application authentication - Security policies - Application authentication - Security policies - Security policies - User authentication - Number of sessions, max Number of sessions, max Number of sessions, max Number of sessions, max Number of registerable nodes, max Number of registerable nodes, max Sanging interval, min Publishing interval, min Number of sever methods, max Number of nontiored items, max Number of sever interfaces, max Number of registerable nodes neave interfaces, max Number of nontiored items, max Number of sever interfaces, max Number of open stations for message functions, max Number of open stations for message functions, max Number of login stations for message functions, max Number of login stations for messages in RIN, max Number of program alarms - Number of residence in the program messages in RIN, max Number of program alarms - Number of residuates of sever interfaces, max Of which status variables, max Of which status variables, max Of which powerfale, max Of which powerfale, max Of which powerfale, max Of which powerfale prod - Forcing - Number of ontingurable irraces - Number of ontin		
OPC_UA_Method/call, max.  - Number of injouts/outputs when calling OPC_UA_Method/call, max.  - OPC UA_Server  - Application authentication - Security policies - Application authentication - Security policies - Application authentication - Security policies - Number of sessions, max Number of sessions, max Number of sessions, max Number of registerable nodes, max Number of registerable nodes, max Sampling interval, min Publishing interval, min Publishing interval, min Publishing interval, min Publishing interval, min Number of server methods, max Number of injouts/outputs per server method, max Number of injouts/outputs per server method, max Number of server interfaces, max Number of server interfac	<ul> <li>Number of registerable nodes, max.</li> </ul>	5 000
OPC_UA, Method/call, max.  OPC UA, Server  Application authentication  — Application authentication  — Security policies  — User authentication  — Number of seasoins, max.  — Number of seasoins, max.  — Number of registerable nodes, max.  — Number of registerable nodes, max.  — Number of subscriptions per session, max.  — Publishing interval, min.  — Publishing interval, min.  — Publishing interval min.  — Publishing interval min.  — Publishing interval min.  — Number of server interfaces, max.  — Number of imputisouphys per server method, max.  — Number of server interfaces, max.  — Number of server interfaces of the server of the server interfaces of the server of the server of the serve		100
- Application authentication - Security policies - Number of sessions, max Number of sessions, max Number of sessions, max Number of subscriptions per session, max Number of subscriptions per session, max Sampling interval, min Publishing interval, min Publishing interval, min Publishing interval, min Number of server methods, max Number of inputs/outputs per server method, max Number of server interfaces, max Number of ones for user-defined server interfaces, max Number of ones for user-defined server interfaces, max MOBBUS - Yes; MODBUS - Yes; MODBUS TCP - Security of the server interfaces of "Companion specification" type and 20 of the type "Reference namespace" - Security of the server interfaces of "Companion specification" type and 20 of the type "Reference namespace" - Security of the server interfaces of "Companion specification" type and 20 of the type "Reference namespace" - Yes; MODBUS - Yes; MODBUS TCP - Security of the server of the server interfaces of "Companion specification" type and 20 of the type "Reference namespace" - Yes; Yes; MODBUS TCP - Security of the server of		20
Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Rsa1, Basic256Rsa1, Basic256Rsa15, Bas	OPC UA Server	
Security policies User authentication Number of sessions, max Number of sessions, max Number of decessible variables, max Number of sessions per session, max Number of sessions per session, max Number of subscriptions per session, max Number of subscriptions per session, max Publishing interval, min Publishing interval, min Publishing interval, min Publishing interval, min Number of inputs/outputs per server method, max Number of monitored litems, max Number of monitored litems, max Number of monitored litems, max Number of server interfaces, max Number of configurable program messages functions, max Yes Number of login stations for message functions, max Yes Number of onligurable program messages, max Number of server messages in RUN, max Number of variables max Status block Status control variable Variables Variables Variables Variables Variables Variables Variables Very without fail-safe Forcing, variables, max of which server variables, max of which control variables, max of which powerfail-proof Variables Number of variables, max of which powerfail-proof Variables Number of variables, max of which powerfail-proof Variables Number of configurable Traces Number of configurable Traces Number of configurable Traces Number of variables, max	<ul> <li>Application authentication</li> </ul>	Yes
- User authentication - Number of sessions, max Number of accessible variables, max Number of registerable nodes, max Number of registerable nodes, max Number of registerable nodes, max Sampling interval, min Publishing interval, min Publishing interval, min Number of server methods, max Number of reputs/outputs per server method, max Number of server methods, max Number of server interfaces, max Yes - NoDBUS - Yes: MODBUS TCP - Server interfaces, "Companion specification" type and 20 of the type "Reference namespace" - Yes - Yes: MODBUS TCP - Server interfaces, "Companion specification" type and 20 of the type "Reference namespace" - Yes: MODBUS TCP - Server interfaces, "Companion specification" type and 20 of the type "Reference namespace" - Yes: MODBUS TCP - Server interfaces, "Companion specification" type and 20 of the type "Reference namespace" - Yes: MODBUS TCP - Server interfaces, "Companion specification" type and 20 of the type "Reference namespace" - Yes: MODBUS TCP - Server interfaces, "Companion specification" type and 20 of the type "Reference namespace" - Yes: MODBUS TCP - Server interfaces, max Server interfaces, max Of which status outsides, max Of which status variables, max Of which powerfail-proof - Forcing, variables - Number of certifies, max Of which powerfail-proof - Serve	• •	
- Number of accessible variables, max Number of subscriptions per session, max. 20 000 - Number of subscriptions per session, max Sampling interval, min Publishing interval, min Publishing interval, min Number of server methods, max Number of server methods, max Number of server interfaces, max Number of server interfaces, max Number of server interfaces, max Number of oserver interfaces, max Number of server interfaces, max Number of oserver interfaces, max Yes, MODBUS TCP - Structions - Number of oserver interfaces, max Yes, MODBUS TCP - Structions - Number of configurable program messages functions, max Yes, MODBUS TCP - Number of oserver interfaces, max Number of saidable program messages in RUN, max Number of saidable program alarms - Numb	— User authentication	"anonymous" or by user name & password
Number of registerable nodes, max Number of subscriptions per session, max Sampling interval, min Publishing interval, min Number of sever methods, max Number of inputs/outputs per server method, max Number of nonitored items, max Number of nonitored items, max Number of nodes for user-defined server interfaces, max Number of longuistations MODBUS M	<ul><li>— Number of sessions, max.</li></ul>	48
Number of subscriptions per session, max Sampling interval, min Publishing interval, min Publishing interval, min Number of server methods, max Number of server interfaces, max Number of nodes for user-defined server interfaces, max Number of loads for user-defined server interfaces, max Of which status variables, max Of which powerfail-proof Forcing -	<ul> <li>Number of accessible variables, max.</li> </ul>	100 000
- Sampling interval, min Publishing interval, min Number of server methods, max Number of inputs/outputs per server method, max Number of inputs/outputs per server method, max Number of monitored items, max Number of server interfaces, max Number of monitored items, max Number of loades for user-defined server interfaces MODBUS - MoDB	<ul> <li>Number of registerable nodes, max.</li> </ul>	20 000
- Publishing interval, min Number of server methods, max Number of inputs/outputs per server method, max Number of monitored items, max Number of server interfaces, max Number of server interfaces, max Number of server interfaces, max Number of nodes for user-defined server interfaces, max Number of nodes for user-defined server interfaces, max.  Further protocols - MODBUS - Yes; MODBUS TCP  Sochronous mode  Equidistance S7 mossage functions Number of login stations for message functions, max Program alarms - Number of login stations for messages, max Did not program messages in RUN, max Program alarms - Number of logingrable program messages in RUN, max Number of simultaneously active program alarms - Number of simultaneously active program alarms - Number of alarms for system diagnostics - Number of alarms for motion technology objects - Number of alarms for motion technology objects - Number of alarms for motion technology objects - Status Block - Status Block - Status Block - Status Scontrol variable - Variables - Number of variables, max of which control variables, max of which powerfail-proof - Forcing - Forcing - Forcing - Forcing - Forcing - Forcing variables, max of which powerfail-proof - Number of centifices, max of which powerfail-proof - Variables - Number of centifices, max of which powerfail-proof - Number of centifices, max of which powerfail-proof - Yes - Variables - Number of centifices, max Of which powerfail-	<ul> <li>Number of subscriptions per session, max.</li> </ul>	20
- Publishing interval, min Number of server methods, max Number of inputs/outputs per server method, max Number of monitored items, max Number of server interfaces, max Number of server interfaces, max Number of server interfaces, max Number of nodes for user-defined server interfaces, max Number of nodes for user-defined server interfaces, max.  Further protocols - MODBUS - Yes; MODBUS TCP  Sochronous mode  Equidistance S7 mossage functions Number of login stations for message functions, max Program alarms - Number of login stations for messages, max Did not program messages in RUN, max Program alarms - Number of logingrable program messages in RUN, max Number of simultaneously active program alarms - Number of simultaneously active program alarms - Number of alarms for system diagnostics - Number of alarms for motion technology objects - Number of alarms for motion technology objects - Number of alarms for motion technology objects - Status Block - Status Block - Status Block - Status Scontrol variable - Variables - Number of variables, max of which control variables, max of which powerfail-proof - Forcing - Forcing - Forcing - Forcing - Forcing - Forcing variables, max of which powerfail-proof - Number of centifices, max of which powerfail-proof - Variables - Number of centifices, max of which powerfail-proof - Number of centifices, max of which powerfail-proof - Yes - Variables - Number of centifices, max Of which powerfail-	<ul> <li>— Sampling interval, min.</li> </ul>	100 ms
- Number of server methods, max Number of inputs/outputs per server method, max Number of monitored items, max Number of monitored items, max Number of nodes for user-defined server interfaces, max Number of long interval and 1 s send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of long interval and 2 send interval - Number of program messages in RUN, max Number of program messages in RUN, max Number of program alarms - Number of program	· -	200 ms
- Number of inputs/outputs per server method, max.  - Number of monitored items, max.  - Number of server interfaces, max.  - Number of server interfaces, max.  - Number of nodes for user-defined server interfaces, max.  - Number of nodes for user-defined server interfaces, max.  - Number of nodes for user-defined server interfaces, max.  - Number of nodes for user-defined server interfaces, max.  - MODBUS  - MODBUS  - MODBUS  - Status functions  Number of login stations for message functions, max.  - Program alarms  Number of login stations for messages, max.  Number of logingurable program messages, max.  - Number of logingurable program messages, max.  Number of simultaneously active program alarms  - Number of simultaneously active program alarms  - Number of alarms for system diagnostics  - Number of breakpoints  Status block  Single step  No  Number of breakpoints  - Status/control variable  - Variables  - Number of variables, max.  - of which status variables, max.  - of which powerfail-proof  - Number of variables, max.  - of which powerfail-proof  - Number of configurable Traces	_	50
- Number of nodes for user-defined server interfaces, max.  - Number of nodes for user-defined server interfaces, max.  Further protocols  • MODBUS  • MODBUS  • MODBUS  • MODBUS  Stephinous mode  Equidistance  S7 message functions  Number of login stations for message functions, max.  Program alarms  • Number of configurable program messages, max.  Number of loadable program messages in RUN, max.  Number of loadable program messages in RUN, max.  Number of simultaneously active program alarms  • Number of alarms for system diagnostics  • Number of alarms for system diagnostics  • Number of alarms for system diagnostics  • Number of alarms for motion technology objects  1000  *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  • Status/control  • Status/control  • Status/control  • Variables  • Number of variables, max.  — of which status variables, max.  — of which control variables, max.  — of which status variables, max.  — of which powerfail-proof  • Present  • Number of configurable Traces  • Number of configurable Traces  • Yes  • Number of configurable Traces  • Yes  • Vup to 512 KB of data per trace are possible	<ul> <li>Number of inputs/outputs per server method,</li> </ul>	
of the type "Reference namespace"  5 000  Further protecols  MODBUS  Yes; MODBUS TCP  Sochronous mode  Equidistance  Yes  Yes; MODBUS TCP  Somessage functions  Number of login stations for message functions, max.  Program alarms  Number of londigurable program messages, max.  Number of loadable program messages in RUN, max.  Number of simultaneously active program alarms  Number of simultaneously active program alarms  Number of alarms for motion technology objects  Test commissioning functions  Joint commissioning functions  Joint commission (Team Engineering)  Status block  Yes; Up to 8 simultaneously (in total across all ES clients)  Single step  No  Number of breakpoints  8 Status/control variable  Variables  Number of variables, max.  — of which status variables, max.  — of which control variables, max.  — Of which powerfail-prof  Other threads are preferred by the "Program me	<ul> <li>Number of monitored items, max.</li> </ul>	2 000; for 1 s sampling interval and 1 s send interval
Further protocols  • MODBUS  NOBBUS  Nober of login stations for message functions, max.  Program alarms  Number of login stations for messages, max.  Number of loadable program messages, max.  Number of loadable program messages, max.  Number of loadable program messages in RUN, max.  Number of loadable program messages in RUN, max.  Number of simultaneously active program alarms  Number of simultaneously active program alarms  Number of alarms for system diagnostics  Number of alarms for system diagnostics  Number of alarms for motion technology objects  Number of motion technology objects  Test commissioning functions  Joint commission (Team Engineering)  Yes; Parallel online access possible for up to 8 engineering systems  Yes; Up to 8 simultaneously (in total across all ES clients)  Status block  Yes; Up to 8 simultaneously (in total across all ES clients)  Status/control  Status/control variable  Variables  No  Number of breakpoints  Status/control variables, max.  — of which status variables, max.  — of which control variables, max.  Procring  Forcing  Forcing	<ul> <li>Number of server interfaces, max.</li> </ul>	
Further protocols  • MODBUS  NODBUS  • MODBUS  Tes; MODBUS TCP    Sochronous mode		5 000
MODBUS  Isochronous mode  Equidistance  S7 message functions  Number of login stations for message functions, max.  Program alarms  Number of login stations for messages, max.  Number of londifficult program messages, max.  Number of loadable program messages, max.  Number of loadable program messages in RUN, max.  Number of loadable program alarms  Number of simultaneously active program alarms  Number of alarms for system diagnostics  Number of alarms for motion technology objects  Number of alarms for motion technology objects  160  Test commissioning functions  Joint commission (Team Engineering)  Status block  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 variables  Variables  Variables  Number of variables, max.  — of which status variables, max.  — of which control variables, max.  200; per job  Forcing  Fo	·	
Sochronous mode   Equidistance   Yes	·	Voc. MODRIIS TOD
Equidistance Yes  S7 message functions  Number of login stations for message functions, 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 simultaneously active program alarms  Number of simultaneously active program alarms  Number of alarms for system diagnostics  Number of alarms for system diagnostics  Number of alarms for motion technology objects  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  Status/control variable  Ves; without fail-safe Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Number of variables, max.  of which status variables, max.  of which control variables, max.  Forcing  Fo		Tes, MODDOS TO
Number of login stations for message functions, max.  Program alarms  Number of login stations for message functions, max.  Program alarms  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.  Number of simultaneously active program alarms  Number of alarms for system diagnostics  Number of alarms for system diagnostics  Number of alarms for motion technology objects  Test commissioning functions  Joint 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  Variables  Number of variables, max.  of which status variables, max.  of which control variables, max.  Forcing  Forcing  Forcing  Forcing  Forcing  Forcing  Peripheral inputs/outputs  Nes  Number of entries, max.  Outprise of the size of the		V
Number of login stations for message functions, max.  Program alarms  Number of configurable program messages, max.  Number of loadable program messages in RUN, max.  Number of loadable program messages in RUN, max.  Number of simultaneously active program alarms  Number of simultaneously active program alarms  Number of 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)  Yes; Parallel online access possible for up to 8 engineering systems  Status block  Yes; Up to 8 simultaneously (in total across all ES clients)  No  Number of breakpoints  Status/control  Status/control variable  Ves; without fail-safe Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Number of variables, max.  — of which status variables, max.  — of which control variables, max.  — of which powerfailes, max.  — of which powerfailes of the powerfailes of the process of the pro	·	Yes
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 program alarms  Number of simultaneously active program alarms  Yes; Parallel online access possible for up to 8 engineering systems  Status block  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 breakpoints  8  Status/control  Yes; without fail-safe  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Number of variables, max.  of which status variables, max.  of which control variables, max.  Porcing  Forcing  Forcing  Forcing, variables  Number of variables, max.  Number of variables, max.  Number of variables, max.  Number of variables, max.  Number of entries, max.  Oliagnostic buffer  Present  Number of horties, max.  Of which powerfail-proof  Number of variable Traces  Number of configurable Traces  Yes  Number of of data per trace are possible	S7 message functions	
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 program alarms  Number of alarms for system diagnostics  Number of alarms for motion technology objects  Number of larms for motion technology objects  Number of larms for motion technology objects  Test commission(Team Engineering)  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  Status/control  Status/control variable  Variables  Number of variables, max.  — of which status variables, max.  — of which status variables, max.  — of which control variables, max.  Peripheral inputs/outputs  Number of variables, max.  200; per job  Forcing  Yes; without fail-safe  Peripheral inputs/outputs  Number of variables, max.  200  Diagnostic buffer  present  Number of entries, max.  — of which powerfail-proof  Yes  Number of configurable Traces  4; Up to 512 KB of data per trace are possible	Number of login stations for message functions, max.	64
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  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  Status/control  Status/control variable  Variables  Number of variables, max.  — of which status variables, max.  — of which control variables, max.  Porcing  Forcing  Forcing  Forcing  Peripheral inputs/outputs  Number of variables, max.  — of which powerfail-proof  Pessent  Number of variables, max.  200  Traces  Number of configurable Traces  4; Up to 512 KB of data per trace are possible	Program alarms	Yes
Number of simultaneously active program alarms  Number of program alarms  Number of program alarms  Number of alarms for system diagnostics  Number of alarms for motion technology objects  Number of alarms for motion technology objects  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)  No  Number of breakpoints  Status/control  Status/control variable  Variables  Number of variables, max.  — of which status variables, max.  — of which control variables, max.  200; per job  Forcing  Forcing  Forcing  Peripheral inputs/outputs  Number of variables, max.  200  Diagnostic buffer  Present  Number of entries, max.  — of which powerfail-proof  Traces  Number of configurable Traces  4; Up to 512 KB of data per trace are possible	Number of configurable program messages, max.	
<ul> <li>Number of program alarms</li> <li>Number of alarms for system diagnostics</li> <li>Number of alarms for motion technology objects</li> <li>160</li> <li>Test commissioning functions</li> <li>Joint commission (Team Engineering)</li> <li>Yes; Parallel online access possible for up to 8 engineering systems</li> <li>Status block</li> <li>Yes; Up to 8 simultaneously (in total across all ES clients)</li> <li>Single step</li> <li>No</li> <li>Number of breakpoints</li> <li>8</li> <li>Status/control</li> <li>Status/control variable</li> <li>Variables</li> <li>Number of variables, max.</li> <li>of which status variables, max.</li> <li>of which control variables, max.</li> <li>200; per job</li> <li>Forcing</li> <li>Forcing</li> <li>Forcing, variables, max.</li> <li>Peripheral inputs/outputs</li> <li>Number of variables, max.</li> <li>200</li> <li>Diagnostic buffer</li> <li>present</li> <li>present</li> <li>Number of entries, max.</li> <li>of which powerfail-proof</li> <li>Number of configurable Traces</li> <li>4; Up to 512 KB of data per trace are possible</li> </ul>	Number of loadable program messages in RUN, max.	5 000
<ul> <li>Number of alarms for system diagnostics</li> <li>Number of alarms for motion technology objects</li> <li>Test commissioning functions</li> <li>Joint commission (Team Engineering)</li> <li>Yes; Parallel online access possible for up to 8 engineering systems</li> <li>Status block</li> <li>Yes; Up to 8 simultaneously (in total across all ES clients)</li> <li>Single step</li> <li>No</li> <li>Number of breakpoints</li> <li>Status/control</li> <li>Status/control variable</li> <li>Variables</li> <li>Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters</li> <li>Number of variables, max.</li> <li>of which status variables, max.</li> <li>yes; without fail-safe</li> <li>Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters</li> </ul> Forcing <ul> <li>Forcing</li> <li>Forcing</li> <li>Forcing, variables, max.</li> <li>Number of variables, max.</li> <li>Peripheral inputs/outputs</li> <li>Number of variables, max.</li> <li>200</li> </ul> Diagnostic buffer <ul> <li>present</li> <li>Number of entries, max.</li> <li>of which powerfail-proof</li> </ul> Traces <ul> <li>Number of configurable Traces</li> <li>4; Up to 512 KB of data per trace are possible</li> </ul>	Number of simultaneously active program alarms	
Number of alarms for motion technology objects  Test commissioning functions  Joint commission (Team Engineering)  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 breakpoints  Status block  Single step  No  Number of breakpoints  8  Status/control  • Status/control variable  • Variables  • Number of variables, max.  — of which status variables, max.  — of which control variables, max.  — of which control variables, max.  200; per job  Forcing  • Forcing  • Forcing  • Forcing, variables  • Number of variables, max.  200  Diagnostic buffer  • present  • Number of entries, max.  — of which powerfail-proof  Traces  • Number of configurable Traces  • Number of configurable Traces  • Number of configurable Traces  4; Up to 512 KB of data per trace are possible	<ul> <li>Number of program alarms</li> </ul>	1 000
Test commissioning functions  Joint commission (Team Engineering)  Status block  Yes; Up to 8 simultaneously (in total across all ES clients)  No  Number of breakpoints  Status/control  • Status/control variable  • Variables  • Number of variables, max.  — of which status variables, max.  — of which control variables, max.  200; per job  Forcing  • Forcing  • Forcing, variables  • Number of variables, max.  200; per job  Forcing (Yes; without fail-safe)  • F	<ul> <li>Number of alarms for system diagnostics</li> </ul>	200
Joint commission (Team Engineering)  Status block  Yes; Up to 8 simultaneously (in total across all ES clients)  No  Number of breakpoints  8  Status/control  • Status/control variable • Variables • Number of variables, max. — of which control variables, max. 200; per job  Forcing  • Forcing • Forcing, variables • Number of variables, max. 200  Diagnostic buffer  • present • Number of entries, max. — of which powerfail-proof  Traces • Number of configurable Traces  • Number of configurable Traces  4; Up to 512 KB of data per trace are possible	<ul> <li>Number of alarms for motion technology objects</li> </ul>	160
Joint commission (Team Engineering)  Status block  Yes; Up to 8 simultaneously (in total across all ES clients)  No  Number of breakpoints  8  Status/control  • Status/control variable • Variables • Number of variables, max. — of which control variables, max. 200; per job  Forcing  • Forcing • Forcing, variables • Number of variables, max. 200  Diagnostic buffer  • present • Number of entries, max. — of which powerfail-proof  Traces • Number of configurable Traces  • Number of configurable Traces  4; Up to 512 KB of data per trace are possible	Test commissioning functions	
Status block Single step No Number of breakpoints 8 Status/control  • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. 200; per job Forcing • Forcing • Forcing, variables, max. 200; per job peripheral inputs/outputs • Number of variables, max. 200 Diagnostic buffer • present • Number of entries, max. 200 Traces • Number of configurable Traces 4; Up to 512 KB of data per trace are possible		Yes: Parallel online access possible for up to 8 engineering systems
Single step  No Number of breakpoints  8  Status/control  • Status/control variable  • Variables  • Number of variables, max.  — of which status variables, max.  — of which control variables, max.  200; per job  control  • Forcing  • Forcing  • Forcing, variables  • Number of variables, max.  200; per job  Control  Ves; without fail-safe  Peripheral inputs/outputs  • Number of variables, max.  200  Diagnostic buffer  • present  • Number of entries, max.  — of which powerfail-proof  Traces  • Number of configurable Traces  4; Up to 512 KB of data per trace are possible		
Number of breakpoints  Status/control  Status/control variable  Variables  Number of variables, max.  of which status variables, max.  of which control variables, max.  Forcing  Forcing  Forcing  Forcing, variables  Number of variables, max.  Ves; without fail-safe  Yes; without fail-safe  Peripheral inputs/outputs  Number of variables, max.  200; per job  Forcing  Forcing  Forcing  Forcing  Forcing, variables  Number of variables, max.  Ves  Number of variables, max.  200  Diagnostic buffer  Present  Number of entries, max.  of which powerfail-proof  Traces  Number of configurable Traces  4; Up to 512 KB of data per trace are possible		
Status/control variable  Status/control variable  Variables  Number of variables, max.  of which status variables, max.  of which control variables, max.  Porcing  Forcing  Forcing  Forcing  Forcing  Forcing  Forcing  Forcing  Ves; without fail-safe  Peripheral inputs/outputs  Number of variables, max.  200  Diagnostic buffer  present  Number of entries, max.  of which powerfail-proof  Yes  Number of configurable Traces  Ves  Ves of data per trace are possible		
Status/control variable Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Number of variables, max. Of which control variables, max. Of which control variables, max.  Forcing Forcing Forcing Forcing, variables Forcing, variables Number of variables, max.  Number of variables, max.  Peripheral inputs/outputs  Number of entries, max. Of which powerfail-proof  Traces Number of configurable Traces  Yes; without fail-safe Peripheral inputs/outputs  Yes  Yes  Yes  Yes  Yes  Yes  Number of entries, max. Of which powerfail-proof  Traces  Number of configurable Traces  Yes to the fail-safe Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	·	
<ul> <li>Variables</li> <li>Number of variables, max.</li> <li>— of which status variables, max.</li> <li>— of which control variables, max.</li> <li>— of which control variables, max.</li> <li>Porcing</li> <li>Forcing, variables</li> <li>Peripheral inputs/outputs</li> <li>Number of variables, max.</li> <li>Diagnostic buffer</li> <li>present</li> <li>Number of entries, max.</li> <li>Number of entries, max.</li> <li>Of which powerfail-proof</li> <li>Traces</li> <li>Number of configurable Traces</li> <li>Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters</li> <li>200; per job</li> <li>Yes; without fail-safe</li> <li>Peripheral inputs/outputs</li> <li>200</li> <li>Diagnostic buffer</li> <li>present</li> <li>Squared</li> <li>Yes</li> <li>Squared</li> <li>Squared</li> <li>Squared</li> <li>A; Up to 512 KB of data per trace are possible</li> </ul>		Vec: without fail cafe
<ul> <li>Number of variables, max.  — of which status variables, max.  — of which control variables, max.  200; per job  200; per job  Forcing  Forcing  Forcing  Forcing, variables  Number of variables, max.  200  Diagnostic buffer  present  present  Number of entries, max.  — of which powerfail-proof  Traces  Number of configurable Traces  4; Up to 512 KB of data per trace are possible</li> </ul>		
<ul> <li>— of which status variables, max.</li> <li>— of which control variables, max.</li> <li>200; per job</li> <li>200; per job</li> <li>Forcing</li> <li>Forcing</li> <li>Forcing, variables</li> <li>Peripheral inputs/outputs</li> <li>Number of variables, max.</li> <li>Diagnostic buffer</li> <li>present</li> <li>present</li> <li>Number of entries, max.</li> <li>— of which powerfail-proof</li> <li>Traces</li> <li>Number of configurable Traces</li> <li>4; Up to 512 KB of data per trace are possible</li> </ul>		inputs/outputs, memory bits, DBS, distributed I/OS, timers, counters
- of which control variables, max.  200; per job  Forcing  Forcing  Forcing  Forcing, variables  Forcing, variables  Number of variables, max.  200  Diagnostic buffer  present  Number of entries, max.  Of which powerfail-proof  Traces  Number of configurable Traces  200  Yes; without fail-safe  Peripheral inputs/outputs  200  Yes  200  Yes  3 200  500  Traces	· · · · · · · · · · · · · · · · · · ·	
Forcing  Forcing  Forcing, variables  Forcing, variables  Number of variables, max.  Diagnostic buffer  present  Number of entries, max.  Of which powerfail-proof  Traces  Number of configurable Traces  Yes; without fail-safe  Peripheral inputs/outputs  200  Yes  3200  500  Traces	·	
<ul> <li>Forcing</li> <li>Forcing, variables</li> <li>Forcing, variables</li> <li>Number of variables, max.</li> <li>Diagnostic buffer</li> <li>present</li> <li>Number of entries, max.</li> <li>of which powerfail-proof</li> <li>Traces</li> <li>Number of configurable Traces</li> <li>Yes; without fail-safe</li> <li>Peripheral inputs/outputs</li> <li>200</li> <li>Yes</li> <li>3 200</li> <li>500</li> <li>Traces</li> <li>Number of configurable Traces</li> <li>4; Up to 512 KB of data per trace are possible</li> </ul>		200; per job
<ul> <li>Forcing, variables</li> <li>Number of variables, max.</li> <li>Diagnostic buffer</li> <li>present</li> <li>Number of entries, max.</li> <li>- of which powerfail-proof</li> <li>Traces</li> <li>Number of configurable Traces</li> <li>4; Up to 512 KB of data per trace are possible</li> </ul>	<u> </u>	
<ul> <li>Number of variables, max.</li> <li>Diagnostic buffer</li> <li>present</li> <li>Number of entries, max.</li> <li>of which powerfail-proof</li> <li>Traces</li> <li>Number of configurable Traces</li> <li>4; Up to 512 KB of data per trace are possible</li> </ul>		
Diagnostic buffer  • present  • Number of entries, max.  — of which powerfail-proof  Traces  • Number of configurable Traces  4; Up to 512 KB of data per trace are possible	<ul> <li>Forcing, variables</li> </ul>	Peripheral inputs/outputs
<ul> <li>present</li> <li>Number of entries, max.</li> <li>— of which powerfail-proof</li> <li>Traces</li> <li>Number of configurable Traces</li> <li>4; Up to 512 KB of data per trace are possible</li> </ul>	Number of variables, max.	200
<ul> <li>Number of entries, max.</li> <li>— of which powerfail-proof</li> <li>Traces</li> <li>Number of configurable Traces</li> <li>4; Up to 512 KB of data per trace are possible</li> </ul>	Diagnostic buffer	
— of which powerfail-proof 500  Traces  ● Number of configurable Traces 4; Up to 512 KB of data per trace are possible	• present	Yes
Traces  ◆ Number of configurable Traces  4; Up to 512 KB of data per trace are possible	<ul> <li>Number of entries, max.</li> </ul>	3 200
Traces  ◆ Number of configurable Traces  4; Up to 512 KB of data per trace are possible	— of which powerfail-proof	500
Number of configurable Traces     4; Up to 512 KB of data per trace are possible		
	Number of configurable Traces	4; Up to 512 KB of data per trace are possible
,		

Diagnostics indication LED	
Diagnostics indication LED  • RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
STOP ACTIVE LED	Yes
Connection display LINK TX/RX	Yes
Supported technology objects	165
Motion Control	Voc. Note: The number of technology chicate affects the guals time of
Wotton Control	Yes; Note: The number of technology objects affects the cycle time of the PLC program; selection guide via the TIA Selection Tool
<ul> <li>Number of available Motion Control resources for technology objects</li> </ul>	2 400
<ul> <li>Required Motion Control resources</li> </ul>	
— per speed-controlled axis	40
— per positioning axis	80
— per synchronous axis	160
— per external encoder	80
— per output cam	20
— per cam track	160
— per probe	40
Positioning axis	
<ul> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> </ul>	7
<ul> <li>Number of positioning axes at motion control cycle of 8 ms (typical value)</li> </ul>	14
Controller	
<ul><li>PID_Compact</li></ul>	Yes; Universal PID controller with integrated optimization
PID_3Step	Yes; PID controller with integrated optimization for valves
PID-Temp	Yes; PID controller with integrated optimization for temperature
Counting and measuring	
<ul> <li>High-speed counter</li> </ul>	Yes
Standards, approvals, certificates	
Highest safety class achievable in safety mode	
<ul> <li>Performance level according to ISO 13849-1</li> </ul>	PLe
<ul> <li>SIL acc. to IEC 61508</li> </ul>	SIL 3
Probability of failure (for service life of 20 years and repa	ir time of 100 hours)
<ul> <li>Low demand mode: PFDavg in accordance with SIL3</li> </ul>	< 2.00E-05
High demand/continuous mode: PFH in accordance with SIL3	< 1.00E-09
Ambient conditions	
Ambient temperature during operation	
<ul> <li>horizontal installation, min.</li> </ul>	-25 °C; No condensation
<ul> <li>horizontal installation, max.</li> </ul>	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off
<ul> <li>vertical installation, min.</li> </ul>	-25 °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
Altitude during operation relating to sea level	
Installation altitude above sea level, max.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes; incl. failsafe
— FBD	Yes; incl. failsafe
— STL	Yes
— SCL	Yes
— GRAPH	Yes
Know-how protection	

<ul> <li>User program protection/password protection</li> </ul>	Yes
Copy protection	Yes
<ul> <li>Block protection</li> </ul>	Yes
Access protection	
<ul> <li>Password for display</li> </ul>	Yes
<ul> <li>Protection level: Write protection</li> </ul>	Yes; Specific write protection both for Standard and for Failsafe
<ul> <li>Protection level: Read/write protection</li> </ul>	Yes
<ul> <li>Protection level: Write protection for Failsafe</li> </ul>	Yes
Protection level: Complete protection	Yes
programming / cycle time monitoring / header	
<ul> <li>lower limit</li> </ul>	adjustable minimum cycle time
• upper limit	adjustable maximum cycle time
Dimensions	
Width	70 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	845 g