SIEMENS

Data sheet

6ES7513-1FM03-0AB0

SIMATIC S7-1500F, CPU 1513F-1 PN, central processing unit with work memory 900 KB for program and 2.5 MB for data, 1st interface: PROFINET IRT with 2-port switch, 25 ns bit performance, SIMATIC Memory Card required **** approvals and certificate according to entry 109815653 at support.industry.siemens.com to be observed! ****

General information	
Product type designation	CPU 1513F-1 PN
HW functional status	FS01
Firmware version	V3.0
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 500 µs
100011101101101101101101101101101101101	(distributed) and 1 ms (central)
Engineering with	
STEP 7 TIA Portal configurable/integrated from	V18 (FW V3.0); with older TIA Portal versions configurable as 6ES7513-
version	1FL02-0AB0
Configuration control	
via dataset	Yes
Display	
Screen diagonal [cm]	3.45 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)	0.73 A
Current consumption, max.	0.9 A
Inrush current, max.	1.15 A; Rated value
l²t	0.5 A²·s
Power	
Infeed power to the backplane bus	10 W
Power consumption from the backplane bus (balanced)	5.5 W
Power loss	
Power loss, typ.	7.5 W
	7 .J VV
Memory Number of slots for SIMATIC memory card	1
•	
SIMATIC memory card required	Yes
Work memory	000 khyto
• integrated (for program)	900 kbyte
• integrated (for data)	2.5 Mbyte
Load memory ● Plug-in (SIMATIC Memory Card), max.	22 Chyta
Backup Backup	32 Gbyte
maintenance-free	Yes
CPU processing times	100
	25 ns
for bit operations, typ.	25 ns

for word energtions, typ	22 no
for word operations, typ.	32 ns
for fixed point arithmetic, typ.	42 ns 170 ns
for floating point arithmetic, typ. CPU-blocks	170 115
	4 000; Pleaka (OD, ED, EC, DD) and UDTa
Number of elements (total) DB	4 000; Blocks (OB, FB, FC, DB) and UDTs
Number range	1 60 999; subdivided into: number range that can be used by the
• Number range	user: 1 59 999, and number range of DBs created via SFC 86: 60 000 60 999
• Size, max.	2.5 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	
Number range	0 65 535
Size, max.	900 kbyte
FC	
Number range	0 65 535
• Size, max.	900 kbyte
OB	00011
• Size, max.	900 kbyte
Number of free cycle OBs	100
Number of time alarm OBs	20
Number of delay alarm OBs Number of qualic interrupt OBs	20
Number of cyclic interrupt OBs Number of cyclic allows OBs	20; With minimum OB 3x cycle of 250 μs
Number of process alarm OBs Number of DDV/4 player OBs	50
Number of DPV1 alarm OBs	3
Number of isochronous mode OBs	2
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	- 1, - p p
Counters, timers and their retentivity S7 counter	
Counters, timers and their retentivity S7 counter • Number	2 048
Counters, timers and their retentivity S7 counter • Number Retentivity	2 048
Counters, timers and their retentivity S7 counter Number Retentivity adjustable	
Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter	2 048 Yes
Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number	2 048
Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity	2 048 Yes Any (only limited by the main memory)
Counters, timers and their retentivity S7 counter Number Retentivity adjustable IEC counter Number Retentivity adjustable Retentivity adjustable	2 048 Yes
Counters, timers and their retentivity S7 counter Number Retentivity adjustable IEC counter Number Retentivity adjustable S7 times	2 048 Yes Any (only limited by the main memory) Yes
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Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity — adjustable S7 times Number Retentivity Retentivity Retentivity	2 048 Yes Any (only limited by the main memory) Yes 2 048
Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity — adjustable S7 times Number Retentivity — adjustable	2 048 Yes Any (only limited by the main memory) Yes
Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity — adjustable S7 times Number Retentivity — adjustable IEC timer	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes
Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity — adjustable S7 times Number Retentivity — adjustable IEC timer Number	2 048 Yes Any (only limited by the main memory) Yes 2 048
Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity — adjustable S7 times Number Retentivity — adjustable IEC timer Number Retentivity — Retentivity	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory)
Counters, timers and their retentivity S7 counter Number Retentivity adjustable IEC counter Number Retentivity adjustable S7 times Number Retentivity adjustable IEC timer Number Retentivity adjustable	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes
Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity — adjustable S7 times Number Retentivity — adjustable IEC timer Number Retentivity — adjustable IEC timer Adjustable Data areas and their retentivity	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes
Counters, timers and their retentivity S7 counter Number Retentivity adjustable IEC counter Number Retentivity adjustable S7 times Number Retentivity adjustable IEC timer Number Retentivity adjustable	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 256 kbyte; in total; available retentive memory for bit memories, timers,
Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity — adjustable S7 times Number Retentivity — adjustable IEC timer Number Retentivity — adjustable IEC timer Retentivity — adjustable IEC timer Retentivity — adjustable IEC timer Retentivity — adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 256 kbyte; in total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 216 KB
Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity — adjustable S7 times Number Retentivity — adjustable IEC timer Number Retentivity — adjustable IEC timer Retentivity — adjustable IEC timer Retentivity — adjustable IEC timer Retentivity — adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max.	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 256 kbyte; in total; available retentive memory for bit memories, timers,
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Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity — adjustable S7 times Number Retentivity — adjustable IEC timer Number Retentivity — adjustable IEC timer Retentivity — adjustable IEC timer Sumber Retentivity — adjustable IEC timer Sumber Retentivity — adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Extended retentive data area (incl. timers, counters, flags), max. Flag Size, max.	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 256 kbyte; in total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 216 KB 2.5 Mbyte; When using PS 6 0W 24/48/60 V DC HF
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Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity — adjustable S7 times Number Retentivity — adjustable IEC timer Number Retentivity — adjustable IEC timer Retentivity — adjustable IEC timer Number Retentivity — adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Extended retentive data area (incl. timers, counters, flags), max. Flag Size, max. Number of clock memories Data blocks	2 048 Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 256 kbyte; in total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 216 KB 2.5 Mbyte; When using PS 6 0W 24/48/60 V DC HF 16 kbyte 8; 8 clock memory bit, grouped into one clock memory byte
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Counters, timers and their retentivity S7 counter Number Retentivity — adjustable IEC counter Number Retentivity — adjustable S7 times Number Retentivity — adjustable IEC timer Number Retentivity — adjustable IEC timer Number Retentivity — adjustable IEC timer Number Retentivity — adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Extended retentive data area (incl. timers, counters, flags), max. Flag Size, max. Number of clock memories Data blocks Retentivity adjustable Retentivity preset Local data per priority class, max.	Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 256 kbyte; in total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 216 KB 2.5 Mbyte; When using PS 6 0W 24/48/60 V DC HF 16 kbyte 8; 8 clock memory bit, grouped into one clock memory byte
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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	on the process in the
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
per CM/CP	·
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
Subprocess images	
Number of subprocess images, max.	32
Hardware configuration	
Number of distributed IO systems	32; A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET or PROFIBUS communication modules, but also by the connection of I/O via AS-i master modules or links (e.g. IE/PB-Link)
Number of DP masters	
• Via CM	6; A maximum of 6 CMs (PROFINET + PROFIBUS) can be inserted in total
Number of IO Controllers	iotai
• integrated	1
• Via CM	6; A maximum of 6 CMs (PROFINET + PROFIBUS) 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
• in AS, master	Yes
• in AS, slave	Yes
on Ethernet via NTP	Yes
Interfaces	
Number of PROFINET interfaces	1
1. Interface	
Interface types	
RJ 45 (Ethernet)	Yes; X1
RJ 45 (Ethernet)Number of ports	Yes; X1 2
,	
 Number of ports 	2
Number of portsintegrated switch	2
Number of portsintegrated switch Protocols	2 Yes
 Number of ports integrated switch Protocols IP protocol 	2 Yes Yes; IPv4
 Number of ports integrated switch Protocols IP protocol PROFINET IO Controller 	2 Yes; IPv4 Yes
Number of ports integrated switch Protocols IP protocol PROFINET IO Controller PROFINET IO Device	2 Yes; IPv4 Yes Yes
Number of ports integrated switch Protocols IP protocol PROFINET IO Controller PROFINET IO Device SIMATIC communication	2 Yes; IPv4 Yes Yes Yes Yes
Number of ports integrated switch Protocols IP protocol PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication	2 Yes; IPv4 Yes Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted
Number of ports integrated switch Protocols IP protocol PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server	2 Yes; IPv4 Yes Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes
Number of ports integrated switch Protocols IP protocol PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy	2 Yes; IPv4 Yes Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes
Number of ports integrated switch Protocols IP protocol PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller	2 Yes; IPv4 Yes Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes
Number of ports integrated switch Protocols IP protocol PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Services	2 Yes; IPv4 Yes Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes Yes
Number of ports integrated switch Protocols IP protocol PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Services — PG/OP communication	2 Yes; IPv4 Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes Yes
Number of ports integrated switch Protocols IP protocol PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Services — PG/OP communication — Isochronous mode	2 Yes; IPv4 Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes Yes Yes
Number of ports integrated switch Protocols IP protocol PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Services — PG/OP communication — Isochronous mode — Direct data exchange	Yes; IPv4 Yes Yes Yes Yes Yes Yes Yes; Optionally also encrypted Yes

- Number of connectable (D Devices (nax.) - Of which (D devices with IRT, max Number of connectable (D Devices for RT, max.) - Of which (D devices for RT, max.) - Of which (D devices for RT, max.) - Number of (D Devices (nax.) - Number of (nax.)		
- Of which In Gewices with IRT, max Number of connectable Io Devices for RT, max of which in line, max Standard or Connections of Standard or	 Number of connectable IO Devices, max. 	128; In total, up to 512 distributed I/O devices can be connected via AS-
Number of connectable I/O Devices for RT, max. of which in line, max Number of I/O Devices that can be simultaneously activated/deactivated, max Number of I/O Devices per tool, max Updating times Updating times Updating times (for send cycle of 250 µs (for send cycle of 250 µs (for send cycle of 17 ms	01 11 10 1 1 10 1	
max. — Number of ID Devices that can be simultaneously activated deactivated, max. — Number of ID Devices per tool, max. — Updating times Updating times Update time for IRT — for send cycle of 250 µs — for send cycle of 250 µs — for send cycle of 1 ms — for send cycle of 500 µs — for send cycle of 1 ms — for send cycle of 1 ms — for send cycle of 1 ms — for send cycle of 2 ms — for send cycle of 500 µs — for send cycle of 1 ms — for send cycle of 1 ms — for send cycle of 2 ms — for send cycle of 2 ms — for send cycle of 500 µs — for send cycle of 500 µs — for send cycle of 2 ms — for send cycle of 500 µs — for send cycle of 1 ms — for send cycle of 2 ms — for send cycle of 1 ms — for send cycle of 500 µs — for send cycle		
- of which in line, max Number of 10 Devices that can be simultaneously activated/deactivated, max Number of 10 Devices per tool, max Updating times - Updating times - Updating times - Update time for IRT - for send cycle of 250 µs - for send cycle of 100 µs - for send cycle of 100 µs - for send cycle of 100 µs - for send cycle of 1 ms - for send cycle of 250 µs - for send cy	•	128
Number of ID Devices that can be simultaneously activated/decayvated, max Number of ID Devices per tool, max Updating times For send cycle of 250 µs For send cycle of 500 µs For send cycle of 1 ms For send cycle of 1 ms For send cycle of 2 ms For send cycle of 2 ms For send cycle of 4 ms With IRT and parameterization of 'odd's send cycles Update time for RT For send cycle of 250 µs For send cycle of 250 µs For send cycle of 500 µs For send cycle of 250 µs For send cycle of 2 ms For send cycle of 1 ms For send cycle of 2 ms For send cycle of 2 ms For send cycle of 1 ms For send cycle of 1 ms For send cycle of 2 ms For send cycle of 4 ms For send cycle of 500 µs For send cycle of 500 µs For send cycle of 500 µs For send cycle of 5 ms		400
simultaneously advirated/deactivated, max. Number of IO Devices por tool, max. - Updating times The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data Update time for IRT - for send cycle of 250 µs - for send cycle of 1 ms - for send cycle of 500 µs - for send cycle of 1 ms - for send cycle of 500 µs		
- Number of ID Devices per tool, max. - Updating times - Update time for IRT - For send cycle of 250 μs - For send cycle of 500 μs - For send cycle of 1 ms - For send cycle of 250 μs - For send cycle of 250 μs - For send cycle of 250 μs - For send cycle of 2 ms - For send cycle of 2 ms - For send cycle of 1 ms - For send cycle of 250 μs - For send cycle of 250 μs - For send cycle of 2 ms - For send cycle of 3 ms - For send cycle of 4 ms - For send cycle of 500 μs - For send cycle of 1 ms - For send cycle of 1 ms - For send cycle of 500 μs - For send cycle of 1 ms - For send cycle of		8; in total across all interfaces
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. To resend cycle of 250 µs To resend cycle of 1 ms For send cycle of 2 ms For send cycle of 3 ms For send cycle of 4 ms For send cycle of 4 ms For send cycle of 500 µs For send cycle of 1 ms For send cycle of 1 ms For send cycle of 1 ms For send cycle of 4 ms For send cycle of 500 µs For s		0
Update time for IRT — for send cycle of 250 µs — for send cycle of 500 µs — for send cycle of 1 ms — for send cycle of 1 ms — for send cycle of 1 ms — with IRT and parameterization of "odd" send cycles in the case of IRT with isochronous mode, the minimum update time of 500 µs of the isochronous OB is decisive 500 µs to 8 ms — for send cycle of 1 ms — with IRT and parameterization of "odd" send cycles — with IRT and parameterization of "odd" send cycles — with IRT and parameterization of "odd" send cycles — for send cycle of 250 µs — for send cycle of 4 ms — for send cycle of 500 µs — for send cycle of		
Update time for IRT — for send cycle of 250 µs — for send cycle of 500 µs — for send cycle of 1 ms — for send cycle of 1 ms — for send cycle of 4 ms — with IRT and parameterization of "odd" send Cycles — With IRT and parameterization of "odd" send Cycles — for send cycle of 250 µs — for send cycle of 1 ms — for send cycle of 4 ms — for send cycle of 1 ms — for send cycle of 2 ms — for send cycle of 1 ms — for send cycle of 1 ms — for send cycle of 1 ms — for send cycle of 2 ms — for send cycle of 2 ms — for send cycle of 3 ms — for send cycle of 4 ms — f	— Updating times	
Update time for IRT — for send cycle of 250 µs — for send cycle of 500 µs — for send cycle of 100 µs — for send cycle of 11 ms — for send cycle of 12 ms — with IRT and parameterization of "odd" send cycles — with IRT and parameterization of "odd" send cycles — for send cycle of 250 µs — for send cycle of 250 µs — for send cycle of 250 µs — for send cycle of 500 µs — for send cycle of 500 µs — for send cycle of 500 µs — for send cycle of 125 µs: 375 µs. 625 — for send cycle of 125 µs — for send cycle of 12 ms — for send cycle of 14 ms — for send cycle of 250 µs — for send cycle of 4 ms — for send cycle of 250 µs —		
	Undate time for IRT	quantity of cornigator accordata
minimum update time of 500 µs of the isochronous OB is decisive		250 us to 4 ms. Note: In the case of IRT with isochronous mode, the
- for send cycle of 500 µs - for send cycle of 1 ms - for send cycle of 2 ms - for send cycle of 4 ms - with IRT and parameterization of "odd" send cycles - With IRT and parameterization of "odd" send cycles - With IRT and parameterization of "odd" send cycles - with IRT and parameterization of "odd" send cycles - for send cycle of 250 µs - for send cycle of 500 µs - for send cycle of 500 µs - for send cycle of 1 ms - for send cycle of 4 ms - for send cycle of 6 ms -	— for scrip cycle of 200 µs	
- for send cycle of 2 ms - With IRT and parameterization of "odd" send cycles Update time for RT - for send cycle of 550 μs - for send cycle of 2 ms - for send cycle of 2 ms - for send cycle of 4 ms - for send cycle of 1 ms - for send	— for send cycle of 500 us	
- for send cycle of 2 ms - for send cycle of 4 ms - With IRT and parameterization of "odd" send cycles Update time for RT - for send cycle of 250 µs - for send cycle of 500 µs - for send cycle of 500 µs - for send cycle of 1 ms - for send cycle of 4 ms - for send cycle of 1 ms - for send cycle of 1 ms - for send cycle of 4 ms - for send cycle of 4 ms - for send cycle of 4 ms - for send cycle of 1 ms - for send cycle		·
for send cycle of 4 ms With IRT and parameterization of "odd" send cycles Update time for RT for send cycle of 250 µs for send cycle of 1 ms for send cycle of 1 ms for send cycle of 1 ms for send cycle of 2 ms for send cycle of 2 ms for send cycle of 2 ms for send cycle of 4 ms for send cycle of 5 ms for send cycle of		
Update time = set "odd" send clock (any multiple of 125 μs: 375 μs, 625 μs 3 875 μs) Update time for RT - for send cycle of 500 μs - for send cycle of 500 μs - for send cycle of 12 ms - for send cycle of 12 ms - for send cycle of 1 ms - for send cycle of 4 ms - for send cycle of 512 ms - for send cycle of 4 ms - for send cycle of 4 ms - for send cycle of 520 μs - for send cycle of 512 ms -		= 1110 10 0= 1110
Update time for RT - for send cycle of 250 µs - for send cycle of 1 ms - for send cycle of 2 ms - for send cycle of 2 ms - for send cycle of 2 ms - for send cycle of 4 ms - for send cycle of 5 ms - for send cycle of 4 ms - for send cycle of 5 ms		
Update time for RT — for send cycle of 250 µs — for send cycle of 150 µs — for send cycle of 1 ms — for send cycle of 2 ms — for send cycle of 4 ms		
- for send cycle of 250 µs	·	μδ 3 0/3 μδ)
- for send cycle of 500 µs	·	250 up to 420 mg
- for send cycle of 1 ms		
- for send cycle of 2 ms		·
PROFINET IO Device Services	•	
PROFINET IO Device Services - PG/OP communication - Isochronous mode - IRT - PROFlenergy - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record Interface types R.45 (Ethernet) - 100 Mbps - Autonegotiation - Autocrossing - Industrial Ethernet status LED - Ves Protocols PROFISafe Number of connections, max Number of connections, max Number of connections via integrated interfaces - Number of S7 routing paths Redundancy - Media redundancy - Media redundancy - MRP - MRPD - MRPD - NumPer of stations in the ring, max. SIMATIC communication - Yes; encryption with TLS V1.3 pre-selected - Yes	— for send cycle of 2 ms	2 ms to 512 ms
Services - PG/OP communication - Isochronous mode - IRT - PROFlenergy - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record - Asset management record - Asset management record - Yes; per user program - Asset management record - Yes; per user program - Asset management record - Yes; per user program - Asset management record - Yes; per user program - Asset management record - Yes; per user program - Asset management record - Yes; per user program - Yes; ves; ves; ves; ves; ves; ves; ves; v	— for send cycle of 4 ms	4 ms to 512 ms
- PG/OP communication Yes - Isochronous mode	PROFINET IO Device	
- Isochronous mode - IRT - PROFlenergy - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record Interface types RJ 45 (Ethernet) • 100 Mbps • Autoregotiation • Autocrossing • Autocrossing • Number of connections • Number of connections, max. • Number of connections reserved for ES/HMI/web • Number of connections via integrated interfaces • Number of S7 routing paths Redundancy mode • III Sync forwarding - MRP - Media redundancy - MRP - Switchover time on line break, typ Number of stations in the ring, max. SIMATIC communication - PG/OP communication - PG/OP communication - S7 routing - Mesi redundancy - Mes; per user program - Yes - yes per user program - Yes	Services	
IRT PROFlenergy Yes; per user program Yes; per user program Yes Protocols Protocols Protocols Protocols Protocols PROFlesfe Yes; per user program Yes; per user progra	— PG/OP communication	Yes
- PROFlenergy - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record - Yes; per user program - Asset management record - Yes; per user program - Ves; ves; per user	 Isochronous mode 	No
- Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record Interface types RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Autorcossing • Industrial Ethernet status LED Protocols PROFIsafe Number of connections • Number of connections, max. • Number of connections via integrated interfaces of the CPU and connected CPs / CMs • Number of s7 routing paths Redundancy mode • H-Sync forwarding Media redundancy - MRP - MRP interconnection, supported - MRPD - Wich interface in the ring, max. SIMATIC communication • S7 routing PS7 routing Yes; per user program Yes per user program Yes; per user program Ye	— IRT	Yes
- Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record Interface typos RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Autorcossing • Industrial Ethernet status LED Protocols PROFIsafe Number of connections • Number of connections, max. • Number of connections via integrated interfaces • Number of sor routing paths • Number of S7 routing paths Redundancy - MRP - MRP interconnection, supported - MRPD - Switchover time on line break, typ Number of stations in the ring, max. SIMATIC communication • S7 routing Yes; per user program Yes; per user progr	— PROFleneray	Yes: per user program
Number of IO Controllers with shared device, max activation/deactivation of I-devices Asset management record Asset	<u> </u>	·
max. — activation/deactivation of I-devices — Asset management record Interface types RJ 45 (Ethernet) • 100 Mbps • Autocrossing • Industrial Ethernet status LED Protocols PROFIsafe Number of connections, max. • Number of connections reserved for ES/HMI/web • Number of connections reserved for ES/HMI/web • Number of Sr routing paths • H-Sync forwarding Media redundancy — Media redundancy — MRP — MRP interconnection, supported — MRPD — Switchover time on line break, typ. — Number of stations in the ring, max. PYes; per user program Yes; per user program Yes Protocols Yes Yes Yes Yes Yes Yes Yes Y		
activation/deactivation of I-devices Asset management record Interface types RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Autocrossing • Industrial Ethernet status LED Protocols PROFIsafe Number of connections • Number of connections reserved for ES/HMI/web • Number of connections via integrated interfaces • Number of connections via integrated interfaces • Number of rorouting paths • Number of stations in the ring, max. SIMATIC communication • PG/OP communication • S7 routing Yes; per user program Yes yes per user program Yes yes yes Yes Yes **Yes 128; via integrated interfaces of the CPU and connected CPs / CMs 128; via integrated interfaces of the CPU and connected CPs / CMs 100 128; via integrated interfaces of the CPU and connected CPs / CMs 100 128; via integrated interfaces of the CPU and connected CPs / CMs 100 100 100 100 100 100 100 1	•	7
The Frace types		Yes: per user program
Interface types RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Autocrossing • Industrial Ethernet status LED Protocols PROFIsafe Number of connections • Number of connections reserved for ES/HMI/web • Number of connections via integrated interfaces • Number of connections via integrated interfaces • Number of S7 routing paths Redundancy mode • H-Sync forwarding Media redundancy — Media redundancy — MRP — MRP interconnection, supported — MRPD — MRPD — Switchover time on line break, typ. — Number of strough in the ring, max. SIMATIC communication • PG/OP communication • S7 routing Yes Yes Yes Yes Yes 128; via integrated interfaces of the CPU and connected CPs / CMs 128; via integrated interfaces of the CPU and connected CPs / CMs 128; via integrated interfaces of the CPU and connected CPs / CMs 109 128; via integrated interfaces of the CPU and connected CPs / CMs 109 109 109 109 109 109 109 10		, , , ,
RJ 45 (Ethernet) • 100 Mbps • Autonegotiation • Autocrossing • Industrial Ethernet status LED Protocols PROFIsafe Number of connections • Number of connections, max. • Number of connections reserved for ES/HMI/web • Number of connections via integrated interfaces • Number of connections via integrated interfaces • Number of S7 routing paths Redundancy mode • H-Sync forwarding Media redundancy — Media redundancy — MRP Media redundancy — MRP interconnection, supported — MRPD — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • PG/OP communication • S7 routing Yes Yes Yes Yes Yes Yes Yes Ye		. со, рол мого роздами
• 100 Mbps • Autonegotiation • Autocrossing • Autocrossing • Industrial Ethernet status LED Protocols PROFIsafe Number of connections • Number of connections, max. • Number of connections reserved for ES/HMI/web • Number of connections via integrated interfaces • Number of S7 routing paths Redundancy mode • H-Sync forwarding Media redundancy — Media redundancy — MRP — MRP interconnection, supported — MRPD — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • Autocrossing Yes Ves; V2.4 / V2.6 Ves; V2.6 Ves; V2.4 / V2.6 Ves; V2.4 / V2.6 Ves; V2.4 / V		
Autonegotiation Autocrossing Autocrossing Yes Industrial Ethernet status LED Yes Protocols PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of connections via integrated interfaces Number of rounections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP Manager; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication Yes; encryption with TLS V1.3 pre-selected Yes Yes		N/
 Autocrossing Industrial Ethernet status LED Yes Protocols PROFIsafe Number of connections Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Number of s7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client MRPD MRPD MRPD Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication Yes; encryption with TLS V1.3 pre-selected Yes; encryption with TLS V1.3 pre-selected Yes 	•	
Industrial Ethernet status LED Protocols PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Number of S7 routing paths Number of connections via integrated interfaces Number of S7 routing paths Number of S7 routing Number of S7 routing Number of stations in the ring, max. Number of S8 Number of S7 routing Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT Number of stations in the ring, max. Number of stations in the ring, max. Number of S7 routing Yes; encryption with TLS V1.3 pre-selected Yes; encryption with TLS V1.3 pre-selected		
PROFIsafe PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of ST routing paths Number of ST routing paths Number of ST routing paths PROFIsafe Number of connections, max. Number of connections via integrated interfaces Number of ST routing paths Number of ST routing paths PROFISATION Nedia redundancy Media redundancy Media redundancy MRP MRP MRP MRP MRP MRP MRP MR		
PROFIsafe Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy — Media redundancy — MRP MRP MRP MRP MRP MRP MRP MRP		Yes
Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP MRP MRP MRP MRP MRP MR	Protocols	
Number of connections Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP MRP MRP MRP MRP MRP MR	PROFIsafe	Yes; V2.4 / V2.6
 Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client MRP D MRPD Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication Yes; MRP Automanager according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT 200 ms; For MRP, bumpless for MRPD 50 SIMATIC communication Yes; encryption with TLS V1.3 pre-selected S7 routing 	Number of connections	
 Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client MRP D MRPD MRPD Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication Yes; encryption with TLS V1.3 pre-selected Yes 	Number of connections, max.	128; via integrated interfaces of the CPU and connected CPs / CMs
 Number of connections via integrated interfaces Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client MRP Wes; as MRP ring node according to IEC 62439-2 Edition 3.0 MRPD MRPD MRPD MRPD MRPD Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication Yes; encryption with TLS V1.3 pre-selected S7 routing 	 Number of connections reserved for ES/HMI/web 	10
 Number of S7 routing paths Redundancy mode H-Sync forwarding Media redundancy Media redundancy MRP MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client MRP Interconnection, supported MRPD MRPD Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication Yes; encryption with TLS V1.3 pre-selected S7 routing 	 Number of connections via integrated interfaces 	88
Redundancy mode • H-Sync forwarding	3	
 ◆ H-Sync forwarding Media redundancy — Media redundancy — MRP — MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client — MRP interconnection, supported — MRPD — WRPD — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication ◆ PG/OP communication ◆ S7 routing Yes Only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT 200 ms; For MRP, bumpless for MRPD Yes; encryption with TLS V1.3 pre-selected Yes; encryption with TLS V1.3 pre-selected 		
Media redundancy — Media redundancy — MRP MRP MRP MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client — MRP interconnection, supported — MRPD — MRPD — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication PG/OP communication Yes; encryption with TLS V1.3 pre-selected Yes Yes Yes; encryption with TLS V1.3 pre-selected Yes	•	Yes
 Media redundancy MRP MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client MRP interconnection, supported MRPD Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication Yes; encryption with TLS V1.3 pre-selected Yes 		
 MRP Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client MRP interconnection, supported MRPD Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT Switchover time on line break, typ. Number of stations in the ring, max. SIMATIC communication PG/OP communication Yes; encryption with TLS V1.3 pre-selected Yes 		only via 1st interface (X1)
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. - Number of stations in the ring, max. SIMATIC communication • PG/OP communication • PG/OP communication Yes; encryption with TLS V1.3 pre-selected • S7 routing Yes	,	
 MRP interconnection, supported MRPD Switchover time on line break, typ. Number of stations in the ring, max. PG/OP communication Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Yes; Requirement: IRT 200 ms; For MRP, bumpless for MRPD 50 SIMATIC communication Yes; encryption with TLS V1.3 pre-selected Yes 	— IVINE	
 — MRPD — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication ● PG/OP communication ● S7 routing Yes; Requirement: IRT 200 ms; For MRP, bumpless for MRPD 50 Yes; encryption with TLS V1.3 pre-selected Yes 	— MRP interconnection, supported	
 — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication PG/OP communication Yes; encryption with TLS V1.3 pre-selected Yes 		
 — Number of stations in the ring, max. SIMATIC communication ◆ PG/OP communication ◆ S7 routing Yes; encryption with TLS V1.3 pre-selected Yes 		
SIMATIC communication		
 PG/OP communication S7 routing Yes; encryption with TLS V1.3 pre-selected Yes 		50
• S7 routing Yes		Very approximation with TLC V/4 Corrected
		• • • • • • • • • • • • • • • • • • • •
Data record routing Yes		res
		V

 S7 communication, as server 	Yes
 S7 communication, as client 	Yes
 User data per job, max. 	See online help (S7 communication, user data size)
Open IE communication	
• TCP/IP	Yes
— Data length, max.	64 kbyte
 several passive connections per port, 	Yes
supported • ISO-on-TCP (RFC1006)	Yes
— Data length, max.	64 kbyte
• UDP	Yes
— Data length, max.	2 kbyte; 1 472 bytes for UDP broadcast
— UDP multicast	Yes; max. 78 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
OPC UA	Voc. "Cmall" licence required
Runtime license requiredOPC UA Client	Yes; "Small" license required 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. 	4
 number of nodes of the client interfaces, recommended max. 	1 000
 Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C 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 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
— 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.— Number of accessible variables, max.	32 50 000
Number of accessible variables, max.Number of registerable nodes, max.	10 000
Number of registerable nodes, max. Number of subscriptions per session, max.	50
— Number of subscriptions per session, max. — Sampling interval, min.	100 ms
— Publishing interval, min.	200 ms
Number of server methods, max.	20
 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. 	15 000
Alarms and Conditions	Yes
 Number of program alarms 	100
Number of alarms for system diagnostics	50
Further protocols	
• MODBUS	Yes; MODBUS TCP
S7 message functions	
Number of login stations for message functions, max.	32
Program alarms	Yes
Number of configurable program messages, max.	5 000; Program messages are generated by the "Program_Alarm"
	block, ProDiag or GRAPH
Number of loadable program messages in RUN, max.	2 500
Number of simultaneously active program alarms	000
Number of program alarms	600
Number of alarms for system diagnostics Number of plarage for median technology, which to	100
Number of alarms for motion technology objects Test commissioning functions	160
Test commissioning functions	Very Parallel online access receible for up to F
Joint commission (Team Engineering)	Yes; Parallel online access possible for up to 5 engineering systems
Status block	Yes; Up to 8 simultaneously (in total across all ES clients)
Single step	No 8
Number of breakpoints Status/control	0
Status/control variable	Yes; without fail-safe
Variables	inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe),
Variables	times, counters
 Number of variables, max. 	
 of which status variables, max. 	200; per job
of which control variables, max.	200; per job
Forcing	
Forcing	Yes; without fail-safe
 Forcing, variables 	peripheral inputs/outputs (without fail-safe)
Number of variables, max.	200
Diagnostic buffer	
• present	Yes
Number of entries, max.	1 000
— of which powerfail-proof	500
Traces • Number of configurable Traces	4; Up to 512 KB of data per trace are possible
-	4, Op to 312 KB of data per trace are possible
Interrupts/diagnostics/status information	
Diagnostics indication LED • RUN/STOP LED	Vos
RON/STOP LED ERROR LED	Yes Yes
MAINT LED	Yes
STOP ACTIVE LED	Yes
Connection display LINK TX/RX	Yes
Supported technology objects	
Motion Control	Yes; Note: The number of technology objects affects the cycle time of
	the PLC program; selection guide via the TIA Selection Tool
 Number of available Motion Control resources for 	1 120
technology objects	
Required Motion Control resources	
— per speed-controlled axis	40
— per positioning axis	80
— per synchronous axis	160
— per external encoder	80
— per output cam	20
— per cam track	160
— per probe	40
Positioning axis Number of positioning axes at motion control	11
 Number of positioning axes at motion control cycle of 4 ms (typical value) 	11

	14
 Number of positioning axes at motion control cycle of 8 ms (typical value) 	17
Controller	
PID_Compact	Yes; Universal PID controller with integrated optimization
PID_3Step	Yes; PID controller with integrated optimization for valves
PID-Temp	Yes; PID controller with integrated optimization for temperature
Counting and measuring	
 High-speed counter 	Yes
Standards, approvals, certificates	
Highest safety class achievable in safety mode	
 Performance level according to ISO 13849-1 	PLe
SIL acc. to IEC 61508	SIL 3
Probability of failure (for service life of 20 years and repa	ir time of 100 hours)
 Low demand mode: PFDavg in accordance with SIL3 	< 2.00E-05
 High demand/continuous mode: PFH in accordance with SIL3 	< 1.00E-09
Ambient conditions	
Ambient temperature during operation	
 horizontal installation, min. 	-30 °C; No condensation
 horizontal installation, max. 	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off
 vertical 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
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
— FBD — STL	Yes
— FBD — STL — SCL	Yes Yes
— FBD — STL — SCL — GRAPH	Yes
— FBD — STL — SCL — GRAPH Know-how protection	Yes Yes Yes
 — FBD — STL — SCL — GRAPH Know-how protection ■ User program protection/password protection 	Yes Yes Yes Yes
— FBD — STL — SCL — GRAPH Know-how protection • User program protection/password protection • Copy protection	Yes Yes Yes Yes Yes
— FBD — STL — SCL — GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection	Yes Yes Yes Yes
— FBD — STL — SCL — GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection Access protection	Yes Yes Yes Yes Yes Yes Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection Access protection • protection of confidential configuration data	Yes Yes Yes Yes Yes Yes Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection Access protection • protection of confidential configuration data • Password for display	Yes Yes Yes Yes Yes Yes Yes Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection Access protection • protection of confidential configuration data • Password for display • Protection level: Write protection	Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection • protection of confidential configuration data • Password for display • Protection level: Write protection • Protection level: Read/write protection	Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection 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	Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection Access protection • protection of confidential configuration data • Password for display • Protection level: Write protection • Protection level: Read/write protection • Protection level: Write protection • Protection level: Omplete protection	Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection 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	Yes
— FBD — STL — SCL — GRAPH Know-how protection	Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection • protection of confidential configuration data • Password for display • Protection level: Write protection • Protection level: Read/write protection • Protection level: Write protection • Protection level: Complete protection programming / cycle time monitoring / header • lower limit	Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection 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 programming / cycle time monitoring / header • lower limit • upper limit	Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection • protection of confidential configuration data • Password for display • Protection level: Write protection • Protection level: Read/write protection • Protection level: Write protection • Protection level: Complete protection programming / cycle time monitoring / header • lower limit • upper limit Dimensions Width	Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection • Block 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 programming / cycle time monitoring / header • lower limit • upper limit Dimensions Width Height	Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection • protection of confidential configuration data • Password for display • Protection level: Write protection • Protection level: Read/write protection • Protection level: Write protection • Protection level: Complete protection programming / cycle time monitoring / header • lower limit • upper limit Dimensions Width Height Depth	Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection • Block 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 programming / cycle time monitoring / header • lower limit • upper limit Dimensions Width Height Depth Weights	Yes
FBD STL SCL GRAPH Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection • protection of confidential configuration data • Password for display • Protection level: Write protection • Protection level: Read/write protection • Protection level: Write protection • Protection level: Complete protection programming / cycle time monitoring / header • lower limit • upper limit Dimensions Width Height Depth	Yes