Data sheet

6ES7518-4AX00-1AC0





SIMATIC S7-1500, CPU Bundle consisting of: CPU 1518-4 PN/DP MFP (6ES7518-4AX00-1AB0), including C/C++ Runtime and OPC UA Runtime license, 6 MB work memory for program and 60 MB for data, 1st interface: PROFINET IRT with 2-port switch, 2nd interface: PROFINET RT, 3rd interface: PROFINET basic services, 4th interface: PROFIBUS, 1 ns bit performance, SIMATIC Memory Card (min. 2 GB) required

General information	
Product type designation	CPU 1518-4 PN/DP MFP
HW functional status	FS04
Firmware version	V3.0
Product function	
● I&M data	Yes; I&M0 to I&M3
• Isochronous mode	Yes; Distributed and central; with minimum OB 6x cycle of 125 μs (distributed) and 1 ms (central)
Engineering with	
 STEP 7 TIA Portal configurable/integrated from version 	V18 (FW V3.0); V15 (FW V2.5) or higher
Configuration control	
via dataset	Yes
Display	
Screen diagonal [cm]	6.1 cm
Control elements	
Number of keys	6
Mode selector switch	1
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Mains buffering	
 Mains/voltage failure stored energy time 	5 ms
Repeat rate, min.	1/s
Input current	
Current consumption (rated value)	1.7 A
Current consumption, max.	2 A
Inrush current, max.	2 A; Rated value
I²t	0.4 A ² ·s
Power	
Infeed power to the backplane bus	12 W
Power consumption from the backplane bus (balanced)	35 W
Power loss	
Power loss, typ.	29 W
Memory	
Number of slots for SIMATIC memory card	1
SIMATIC memory card required	Yes
Work memory	
• integrated (for program)	6 Mbyte

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• integrated (for data)	60 Mbyte
 integrated (for CPU function library of CPU Runtime) 	50 Mbyte; Note: The "CPU function library of the CPU" are C/C++ blocks for the user program that were created using the SIMATIC ODK 1500S or Target
	1500S.
Working memory for additional functions	
 Integrated (for C/C++ Runtime application) 	1 024 Mbyte
available (for Linux runtime application)	1 Gbyte
Load memory	
 Plug-in (SIMATIC Memory Card), max. 	32 Gbyte; the memory card must have at least 2 GB of space on it
Backup	
maintenance-free	Yes
CPU processing times	
for bit operations, typ.	1 ns
for word operations, typ.	2 ns
for fixed point arithmetic, typ.	2 ns
for floating point arithmetic, typ.	6 ns
CPU-blocks	
Number of elements (total)	20 000; Blocks (OB, FB, FC, DB) and UDTs
DB	
Number range	1 60 999; subdivided into: number range that can be used by the user: 1 59 999, and number range of DBs created via SFC 86: 60 000 60 999
• Size, max.	16 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	To Mbyte, For bbs with absolute addressing, the max. size is 64 Kb
Number range	0 65 535
• Size, max.	1 Mbyte
FC	
Number range	0 65 535
• Size, max.	1 Mbyte
ОВ	
• Size, max.	1 Mbyte
 Number of free cycle OBs 	100
 Number of time alarm OBs 	20
 Number of delay alarm OBs 	20
 Number of cyclic interrupt OBs 	20; with minimum OB 3x cycle of 100 μs
 Number of process alarm OBs 	50
 Number of DPV1 alarm OBs 	3
 Number of isochronous mode OBs 	3
 Number of technology synchronous alarm OBs 	2
Number of startup OBs	100
 Number of asynchronous error OBs 	4
Number of synchronous error OBs	2
Number of diagnostic alarm OBs	1
Nesting depth	
per priority class	24
Counters, timers and their retentivity	
S7 counter	
• Number	2 048
Retentivity	
— adjustable	Yes
IEC counter	
Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes
S7 times	
Number	2 048
Retentivity	
— adjustable	Yes
IEC timer	
Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes

Retentive data area (incl. timers, counters, flags), max.	768 kbyte; In total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 700 KB
Extended retentive data area (incl. timers, counters, flags), max.	20 Mbyte; When using PS 6 0W 24/48/60 V DC HF
Flag	
• Size, max.	16 kbyte
 Number of clock memories 	8; 8 clock memory bit, grouped into one clock memory byte
Data blocks	
Retentivity adjustable	Yes
Retentivity preset	No
Local data	
per priority class, max.	64 kbyte; max. 16 KB per block
Address area	
Number of IO modules	16 384; 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	oz najto, i in outputo are in the process image
— Inputs (volume)	32 khyte: max 32 KR via X1: max 8 KR via X2 or X4
	32 kbyte; max. 32 KB via X1; max. 8 KB via X2 or X4
— Outputs (volume)	32 kbyte; max. 32 KB via X1; max. 8 KB via X2 or X4
per CM/CP	Oliberto
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
Subprocess images	
Number of subprocess images, max.	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	, (-g)
• integrated	1
• Via CM	8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total
Number of IO Controllers	
• integrated	2
• Via CM	8; A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total
Rack	
Modules per rack, max.	32; CPU + 31 modules
Number of lines, max.	1
PtP CM	
Number of PtP CMs	the number of connectable PtP CMs is only limited by the number of available slots
Time of day	
Clock	
• Type	Hardware clock
Backup time	6 wk; At 40 °C ambient temperature, typically
Deviation per day, max.	10 s; Typ.: 2 s
Operating hours counter	
Number	16
Clock synchronization	
 supported 	Yes
• to DP, master	Yes
• in AS, master	Yes
• in AS, device	Yes
on Ethernet via NTP	Yes
Interfaces	
Number of PROFINET interfaces	3
Number of PROFIBUS interfaces	1
1. Interface	
Interface types	
 RJ 45 (Ethernet) 	Yes; X1

Number of ports		
### Protocol ### P		2
PROPRIET IO Controller Yes Prof.	The state of the s	Yes
■ PROFINET IO Controller ■ PROFINET IO Device ■ SIMATIC communication ■ Open IE communication ■ Yes ■ Ves server ■ Media redundancy ■ Yes ■ PROFINET IO Controller ■ Number of connectable IO Devices, max. ■ Of which In line, max. ■ Number of connectable IO Devices for RT, max. ■ Of which In line, max. ■ Number of IO Devices that can be simultaneously advivated/deactivated, max. ■ Number of IO Devices that can be aimultaneously advivated/deactivated, 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 125 µs ■ For send cycle of 125 µs ■ For send cycle of 126 µs ■ For send cycle of 157 µs ■ For send cycle of 157 µs ■ For send cycle of 158 µs ■ For send		Vest ID-4
PROPINET ID Device SIMATIC communication Open IE communication Ves Open IE communication Ves Neted to redundancy Ves Neted and redundancy Ves PROPINET IO Controller Services PCOP communication Isochronous mode Object data exchanage PROPINET IO Controller Ves Ves PROPINET IO Controller Ves Ves Ves PROPINET IO Controller Ves Ves Ves PROPINET IO Controller Ves Ves Ves Ves Ves PROPINET IO Controller Ves	·	
Services PROFINET ID Communication Web server Web Server Web Server Web Server Web Server PROFINET Of Controller Services PROFINET Of Controller Services PROFINET OF Controller Services PROFINET OF Controller PROFIner of Controller Service PROFINET OF Controller Number of connectable IO Devices, max. PROFINET OF Controller Service PROFINET OF Controller PROFINET OF CO		
• Veto server • Veto Server • Veto Server • Veto Server • Media redundancy • Yes • Media redundancy • Yes PROFIBERT Iol Controller Services - PG/OP communication • Jeck Controller Services - PG/OP communication • Jeck Controller - PROFILE data exchange - IRT - Into the line max - Number of connectable IO Devices, max - Number of Devices with IRT, max - Of which in line, max - Into the line max - Into the line max - Into the line max - Number of IO Devices that can be simultaneously activated decadeatheater, max - Number of IO Devices that can be simultaneously activated decadeatheater, max - Updating times - 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 125 µs - For send cycle of 150 µs - For send cycle of 150 µs - For send cycle of 150 µs - For send cycle of 250 µs - PROFILE For s		
With server Yes		
■ Media redundancy PROPINET IO Controllier Services - PG/OP communication - Isochronous mode - Direct data exchange - IRT - PROFInenery - PROFInenery - Promitzed startup - Number of connectable IO Devices, max Of which IO devices with IRT, max Of which In itine, max of which in line, max In the promone of the promone o	•	
PROFINET IO Controller Services - PSIGP communication - Isochronous mode - Direct data exchange - HRT - PROFlenergy - Prioritized startup - Number of connectable IO Devices, max Of which IO devices with IRT, max Number of connectable IO Devices for RT, max Of which IO devices with IRT, max Number of Connectable IO Devices for RT, max Number of IO Devices that can be simultaneously activated discertificated, max Number of IO Devices per tool, max Number of IO Devices per tool, max Updating times - In or send cycle of 125 µs - Ior send cycle of 125 µs - Ior send cycle of 155 µs - Ior send cycle of 150 µs - Ior send cycle of 250 µs - Ior send cycle of 4 ms - In the 16 RT - Ior send cycle of 250 µs - Ior send cycle of 350 µs - Ior send cycle of 4 ms - In the 16 RT - Ior send cycle of 4 ms - In the 16 RT - Ior send cycle of 550 µs - Ior send cycle of 5		
Services - PG/OP communication - Isochronous mode - Direct data exchange - IRT - PROFlenergy - Prioritized startup - Number of connectable IO Devices, max Of which IO devices with IRT, max Of which IO devices with IRT, max Of which In Devices for RT, max Of which in line, max Number of connectable IO Devices for RT, max Of which in line, max In the priority of the priority		Yes
PGOP communication		
Isochronous mode		Voc
- Direct data exchange - IRT - PROFlenergy - Prioritized startup - Number of connectable IO Devices, max Of which ID devices with IRT, max - Number of connectable IO Devices for RT, max Of which ID devices with IRT, max Number of connectable IO Devices for RT, max of which In line, max Number of IO Devices that can be simultaneously activated/deactivated, max Number of IO Devices per tool, max Number of IO Devices per tool, max Updating times - Updating times - For send cycle of 125 µs - For send cycle of 125 µs - For send cycle of 125 µs - For send cycle of 187.5 µ		
- IRT - PROFlenergy - Prioritized startup - Number of connectable ICD Devices, max Of which ID devices with IRT, max Of which ID devices with IRT, max Of which in line, max Of which in line, max Number of connectable ICD Devices for RT, max Of which in line, max Number of ICD Devices that can be simultaneously activated/deactivated, max Number of ICD Devices per tool, max Updating times - For send cycle of 125 μs - For se		
- PROFlenergy - Prioritized startup - Number of connectable IO Devices, max Of which IO devices with IRT, max Of which IO devices with IRT, max Of which In Idea with In Image Number of IO Devices for RT, max of which in line, max Number of IO Devices that can be simultaneously activated/decidivated, max Number of IO Devices per tool, max Number of IO Devices per tool, max Number of IO Devices per 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 187.5 µs - For send cycle of 187.5 µs - For send cycle of 187.5 µs - For send cycle of 500 µs - For send cycle of 187.5 µs - For send cycle of 500 µs - For send cycle of 10 ms - For send cycle o	_	
Prioritized startup Number of connectable IO Devices, max. Number of connectable IO Devices of RT, max. Number of connectable IO Devices for RT, max. Number of IO Devices with IRT, max. Number of IO Devices and tac an be simultaneously acharded described, max. Number of IO Devices per 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 To re send cycle of 125 µs For send cycle of 250 µs F		
- Number of connectable IO Devices, max Of which IO devices with IRT, max Of which IO devices with IRT, max Of which In line, max Of which In line, max Number of IO Devices that can be simultaneously activated disadvated, max Number of IO Devices per tool, max Number of IO Devices per tool, max Updating times - Updating times - For send cycle of 125 μs - For send cycle of 125 μs - For send cycle of 125 μs - For send cycle of 187 5 μs - For send cycle of 188 5 μs - For send cycle		
PROFIBEUS or PROFINET 64 - Number of connectable IO Devices for RT, max of which in line, max Number of IO Devices that can be simultaneously activated/deactivated, max. - Number of IO Devices per tool, max Updating times - Updating times - Updating times - Update time for IRT - for send cycle of 125 µs - for send cycle of 187.5 µs - for send cycle of 1800 µs - for send cycle of 1800 µs - for send cycle of 1800 µs - for send cycle of 14 ms - for send cycle of 14 ms - for send cycle of 14 ms - with IRT and parameterization of "odd" send cycles - for send cycle of 500 µs - for send cycle of 500 µs - for send cycle of 500 µs - for send cycle of 150	·	
- Number of connectable IO Devices for RT, max of which in line, max Number of IO Devices that can be simultaneously activated/deactivated, max Number of IO Devices per tool, max Number of IO Devices per tool, max Updating times - Updating times - 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 125 µs - For send cycle of 125 µs - For send cycle of 187.5 µs - For send cycle of 250 µs - 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 250 µs - For send cycle of 1 ms -		PROFIBUS or PROFINET
- of which in line, max Number of IO Devices that can be simultaneously activated/deactivated/max Number of IO Devices per tool, max Updating times - Updating times - Free transport 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 125 μs - For send cycle of 125 μs - For send cycle of 125 μs - For send cycle of 150 μs - For send cycle of 150 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 4 ms - With IRT and parameterization of "odd" send cycles - For send cycle of 550 μs - For send cycle of 550 μs - For send cycle of 550 μs - For send cycle of 150 μs - For send cycle of 1 ms - For send cycle of 150 μs - For send cycle of 1 ms - For send cycle of 2 ms - For send cycle of 1 ms - For send cycle of 2 ms - F		
- Number of IO Devices that can be simultaneously activate/deactivated, max. - Number of 1D Devices per 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 125 μs - for send cycle of 125 μs - for send cycle of 126 μs - for send cycle of 500 μs - for send cycle of 500 μs - for send cycle of 150 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 - for send cycle of 500 μs - for send cycle of 500 μs - for send cycle of 500 μs - 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 500 μs - for send cycle of 4 ms - for send cycle of 500 μs - for send cycle of 4 ms - for send cycle of 500 μs - for send cycle		
activate/deactivated, max. - Number of IO Devices per 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 125 µs - for send cycle of 187.5 µs - 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 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 Update time for RT - for send cycle of 500 µs - for send cycle of 1 ms - for send cycle of 250 µs - for send cycle of 500 µs - for send cycle of 100 µs - 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 1 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 2 ms - for send cycle of 1 ms - for send cycle of 2 ms - for send cycle of		
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 125 µs — for send cycle of 187.5 µs — 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 — 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 500 µs — for send cycle of 1 ms — for send cycle of 250 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 — for send cycle of 2 ms — the send cycle of 2 ms — for send cycle of 3 ms — for send cycle of 2 ms — for send cycle of 3 ms — the send cycle of 3 ms — for send cycle of 2 ms — for send cycle of 3 ms — for send cycle of 4 ms — respective of 2 ms — for send cycle of 3 ms — for send cycle of 4 ms — respective of 2 ms — for send cycle of 3 ms — for send cycle o	activated/deactivated, max.	
set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data Update time for IRT	•	
Update time for IRT — for send cycle of 125 μs — for send cycle of 187.5 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 10 ms — for send cycle of 10 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" send cycle — With IRT and parameterization of "odd" send cycle — 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 1 ms — for send cycle of 1 ms — for send cycle of 4 ms — for send cycle of 500 μs — for send cycle of 4 ms — hor beat cycle of 500 μs — for send cycle of 4 ms — hor send cycle of 500 μs — for	— Updating times	set for PROFINET IO, on the number of IO devices, and on the quantity of
- for send cycle of 125 μs - for send cycle of 187.5 μs - for send cycle of 187.5 μs - 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 1 ms - for send cycle of 2 ms - for send cycle of 4 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 - 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 1 ms - For send cycle of 1 ms - For send cycle of 4 ms - For send cycle of 500 μs -	Update time for IRT	
- for send cycle of 187.5 μs - 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 - for send cycle of 2 ms - for send cycle of 4 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 - For send cycle of 250 μs - For send cycle of 250 μs - For send cycle of 1 ms - For send cycle of 4 ms - For send cycle of 500 μs - For send cycle of 4 ms - For send cycle of 500 μs - For send cycle of 500		125 µs
- for send cycle of 500 μs - 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" send cycles - With IRT and parameterization of "odd" send cycles Update time = set "odd" send clock (any multiple of 125 μs: 375 μs, 625 μs 3 875 μs) 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 1 ms - for send cycle of 4 ms - FROFINET IO Device Services - PC/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 - Nes; per user program - Asset management record - Yes; per user program - Asset management record - Nes; yes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Asset management record - Nes; per user program - Nes; per user pr	— for send cycle of 187.5 μs	187.5 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 - With IRT and parameterization of "odd" send cycles - For send cycle of 250 μs - 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 4 ms - For send cycle of 2 ms - For send cycle of	— for send cycle of 250 μs	250 μs to 4 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 - For send cycle of 250 μs - for send cycle of 250 μs - for send cycle of 500 μs - for send cycle of 1 ms - for send cycle of 2 ms - for send cycle of 2 ms - for send cycle of 4 ms - for send cycle of 500 μs - For send cycle	— for send cycle of 500 μs	500 μs to 8 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 - For send cycle of 250 μs - For send cycle of 500 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 500 μs - For send cycle of 4 ms - For send cycle of 2 ms - For send cycle of 4 ms - For send cycle of 4 ms - For send cycle of 2 ms -	— for send cycle of 1 ms	1 ms to 16 ms
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 2 ms — for send cycle of 4 ms — for send cycle of 500 μs — for send cycle of 2 ms — for send cycle of 500 μs — for send cycle of 512 ms — for send cycle of 512 ms — FROFINET IO Device Services — PG/OP communication — IRT — PROFIenergy — Shared device — Number of IO Controllers with shared device, max. — activation/deactivation of I-devices — Number of IO Controllers with shared device, max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch No Protocols	— for send cycle of 2 ms	2 ms to 32 ms
Update time for RT — for send cycle of 250 µs — for send cycle of 500 µs — for send cycle of 1 ms — for send cycle of 2 ms — for send cycle of 2 ms — for send cycle of 4 ms — for send cycle of 4 ms — for send cycle of 4 ms — for send cycle of 500 µs — for send cycle of 2 ms — for send cycle of 4 ms — for send cycle of 4 ms — FOFINET IO Device Services — PG/OP communication — Isochronous mode — IRT — PROFlenergy — Shared device — PROFlenergy — Shared device — Number of IO Controllers with shared device, max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types • RJ 45 (Ethernet) • IN 45 (Ethernet) • Interface switch No Protocols	— for send cycle of 4 ms	4 ms to 64 ms
- 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 - for send cycle of 2 ms - For send cycl	— With IRT and parameterization of "odd" send cycles	
- for send cycle of 500 μs - for send cycle of 1 ms - for send cycle of 2 ms - for send cycle of 2 ms - for send cycle of 4 ms - FROFINET IO Device Services - PG/OP communication - Isochronous mode - IRT - Yes; Minimum send cycle of 250 μs - PROFIenergy - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - 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 - 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; x2 - Number of ports - Interface types - RJ 45 (Ethernet) - Interface types - Interfac	Update time for RT	
- for send cycle of 1 ms - for send cycle of 2 ms - for send cycle of 4 ms 2 ms to 512 ms - for send cycle of 4 ms 4 ms to 512 ms PROFINET IO Device Services - PG/OP communication - Isochronous mode - IRT - Yes; Minimum send cycle of 250 μs - PROFlenergy - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record PRJ 45 (Ethernet) - Interface types - Number of ports - integrated switch - No - Protocols	— for send cycle of 250 μs	250 µs to 128 ms
— for send cycle of 2 ms — for send cycle of 4 ms 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 PINT PROFINET IO Device Yes Winimum send cycle of 250 μs Yes; per user program Interface types PRJ 45 (Ethernet) Interface switch No Protocols	— for send cycle of 500 μs	500 μs to 256 ms
— for send cycle of 4 ms PROFINET IO Device Services — PG/OP communication Yes — Isochronous mode No — IRT Yes; Minimum send cycle of 250 μs — PROFlenergy Yes; per user program — Shared device Yes — Number of IO Controllers with shared device, max. — activation/deactivation of I-devices Yes; per user program — Asset management record Yes; per user program 2. Interface types ■ RJ 45 (Ethernet) Yes; X2 ■ Number of ports ■ integrated switch Protocols	— for send cycle of 1 ms	1 ms to 512 ms
PROFINET IO Device Services - PG/OP communication Yes No Isochronous mode No PROFIELD Yes; Minimum send cycle of 250 µs Yes; per user program Yes; per user program Yes Profield Yes; per user program Yes Profield Yes; per user program Yes Profield Yes; per user program Yes; per user p	— for send cycle of 2 ms	2 ms to 512 ms
Services - PG/OP communication - Isochronous mode - IRT - PROFlenergy - PROFlenergy - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record 2. Interface Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols	— for send cycle of 4 ms	4 ms to 512 ms
- PG/OP communication - Isochronous mode - IRT - Yes; Minimum send cycle of 250 μs - PROFlenergy - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record 2. Interface Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols	PROFINET IO Device	
- Isochronous mode - IRT - Yes; Minimum send cycle of 250 μs - PROFlenergy - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record 2. Interface Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols	Services	
- IRT - PROFlenergy - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record 2. Interface Interface types RJ 45 (Ethernet) Number of ports integrated switch Protocols Yes; Minimum send cycle of 250 μs Yes; per user program Yes; per user program Yes; per user program Yes; per user program Yes; x2 No	— PG/OP communication	Yes
- PROFlenergy - Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record 2. Interface Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols Yes; per user program Yes; per user program Yes; per user program Yes; x2 Number of ports No	— Isochronous mode	No
- Shared device - Number of IO Controllers with shared device, max activation/deactivation of I-devices - Asset management record 2. Interface Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols Yes; per user program Yes; per user program Yes; X2 • Number of ports • integrated switch No	— IRT	Yes; Minimum send cycle of 250 µs
 Number of IO Controllers with shared device, max. — activation/deactivation of I-devices — Asset management record Yes; per user program 2. Interface Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols 	— PROFlenergy	Yes; per user program
activation/deactivation of I-devices Asset management record Yes; per user program Yes; per user program 2. Interface Interface types RJ 45 (Ethernet) Number of ports integrated switch No Protocols	— Shared device	Yes
— Asset management record 2. Interface Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols Yes; per user program Yes; X2 Number of ports No	 Number of IO Controllers with shared device, max. 	4
2. Interface Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols 1 No	 activation/deactivation of I-devices 	Yes; per user program
Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols Yes; X2 No No	— Asset management record	Yes; per user program
 RJ 45 (Ethernet) Number of ports integrated switch Protocols Yes; X2 No No No Protocols	2. Interface	
 Number of ports integrated switch Protocols 	Interface types	
• integrated switch No Protocols	• RJ 45 (Ethernet)	Yes; X2
Protocols	 Number of ports 	1
	integrated switch	No
• IP protocol Yes; IPv4	Protocols	
	IP protocol	Yes; IPv4

PROFINET IO Controller	Yes
PROFINET IO Device	Yes
 SIMATIC communication 	Yes
Open IE communication	Yes; Optionally also encrypted
Web server	Yes
Media redundancy	No
PROFINET IO Controller	
Services	
— PG/OP communication	Yes
— Isochronous mode	No
Direct data exchange	No
— IRT	No
— PROFlenergy	Yes; per user program
 Prioritized startup 	No
— Number of connectable IO Devices, max.	128; In total, up to 1 000 distributed I/O devices can be connected via AS-i, PROFIBUS or PROFINET
 Number of connectable IO Devices for RT, max. 	128
— of which in line, max.	128
 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	
— for send cycle of 1 ms	1 ms to 512 ms
PROFINET IO Device	(6 6 12
Services	
— PG/OP communication	Yes
— Isochronous mode	No
— IRT	No
— PROFlenergy	Yes; per user program
Prioritized startup	No
— Shared device	Yes
Number of IO Controllers with shared device, max.	4
— activation/deactivation of I-devices	Yes; per user program
Asset management record	Yes; per user program
3. Interface	
Interface types	
RJ 45 (Ethernet)	Yes; X3
Number of ports	1; C/C++ Runtime can also be reached via this port
integrated switch	No
Protocols	
IP protocol	
• IP protocol	Yes; IPv4
PROFINET IO Controller	Yes; IPv4 No
PROFINET IO Controller	No
PROFINET IO ControllerPROFINET IO Device	No No
PROFINET IO ControllerPROFINET IO DeviceSIMATIC communication	No No Yes
 PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication 	No No Yes Yes
 PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server 	No No Yes Yes
 PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server 4. Interface	No No Yes Yes
PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Interface Interface types	No No Yes Yes
PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Interface Interface types RS 485	No No Yes Yes Yes
PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Interface Interface types RS 485 Number of ports	No No Yes Yes Yes
PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Interface Interface types RS 485 Number of ports Protocols	No No Yes Yes Yes Yes 1
PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Interface Interface types RS 485 Number of ports Protocols PROFIBUS DP master	No No Yes Yes Yes Yes Yes: Yes: Yes: Yes
PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Interface Interface types RS 485 Number of ports Protocols PROFIBUS DP master PROFIBUS DP device SIMATIC communication	No No Yes Yes Yes Yes Yes; X4 1 Yes No
PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Interface Interface Interface types RS 485 Number of ports Protocols PROFIBUS DP master PROFIBUS DP device SIMATIC communication PROFIBUS DP master	No No Yes Yes Yes Yes Yes; X4 1 Yes No Yes
PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Interface Interface types RS 485 Number of ports Protocols PROFIBUS DP master PROFIBUS DP device SIMATIC communication PROFIBUS DP master Number of connections, max.	No No Yes Yes Yes Yes Yes Yes Yes Yes As, for the integrated PROFIBUS DP interface
PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Interface Interface Interface types RS 485 Number of ports Protocols PROFIBUS DP master PROFIBUS DP device SIMATIC communication PROFIBUS DP master	No No Yes Yes Yes Yes Yes; X4 1 Yes No Yes

DO/OD communication	Voc
— PG/OP communication	Yes
— Equidistance	Yes
— Isochronous mode	Yes
— activation/deactivation of DP devices	Yes
Interface types	
RJ 45 (Ethernet)	V
• 100 Mbps	Yes
• 1000 Mbps	Yes; Only possible at the X3 interface of the CPU 1518
Autoregotiation	Yes
Autocrossing Industrial Ethernet status I ED	Yes
Industrial Ethernet status LED RS 485	Yes
• Transmission rate, max.	12 Mbit/s
Protocols	12 Mbito
PROFIsafe	No
Number of connections	
Number of connections, max.	384; via integrated interfaces of the CPU and connected CPs / CMs
Number of connections, max. Number of connections reserved for ES/HMI/web	10
Number of connections via integrated interfaces	320
Number of S7 routing paths	64; in total, only 16 S7-Routing connections are supported via PROFIBUS
Redundancy mode	
H-Sync forwarding	Yes
Media redundancy	
— Media redundancy	only via 1st interface (X1)
— MRP	Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client
- MRP interconnection, supported	Yes; as MRP ring node according to IEC 62439-2 Edition 3.0
— MRPD	Yes; Requirement: IRT
 Switchover time on line break, typ. 	200 ms; For MRP, bumpless for MRPD
— Number of stations in the ring, max.	50
SIMATIC communication	
PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
S7 routing	Yes
Data record routing	Yes
 S7 communication, as server 	Yes
 S7 communication, as client 	Yes
User data per job, max.	See online help (S7 communication, user data size)
Open IE communication	
• TCP/IP	Yes
— Data length, max.	64 kbyte
 several passive connections per port, supported 	Yes
• ISO-on-TCP (RFC1006)	Yes
— Data length, max.	64 kbyte
• UDP	Yes
— Data length, max.	2 kbyte; 1 472 bytes for UDP broadcast
— UDP multicast	Yes; 128 multicast circuits (of which max. 5 via X1)
• DHCP	Yes
• DNS	Yes
• SNMP	Yes; disconnected by default
• DCP	Yes
• LLDP	Yes
LLDP Encryption	Yes; Optional
Encryption	
Encryption Web server	Yes; Optional
Encryption Web server HTTP	Yes; Optional Yes; Standard and user pages
EncryptionWeb serverHTTPHTTPS	Yes; Optional Yes; Standard and user pages
Encryption Web server HTTP HTTPS OPC UA	Yes; Optional Yes; Standard and user pages Yes; Standard and user pages
 Encryption Web server HTTP HTTPS OPC UA Runtime license required 	Yes; Optional Yes; Standard and user pages Yes; Standard and user pages Yes; "Large" license required
Encryption Web server HTTP HTTPS OPC UA Runtime license required OPC UA Client	Yes; Optional Yes; Standard and user pages Yes; Standard and user pages Yes; "Large" license required Yes; Data Access (registered Read/Write), Method Call

— User authentication	"anonymous" or by user name & password
— Number of connections, max.	40
 Number of nodes of the client interfaces, recommended max. 	5 000
 Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/OPC_U 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.	64
 Number of accessible variables, max. 	200 000
 Number of registerable nodes, max. 	50 000
 Number of subscriptions per session, max. 	50
— Sampling interval, min.	10 ms
— Publishing interval, min.	10 ms
 Number of server methods, max. 	100
 Number of inputs/outputs per server method, max. 	20
 Number of monitored items, recommended max. 	24 000; for 1 s sampling interval and 1 s send interval
 Number of server interfaces, max. 	10 of each "Server interfaces" / "Companion specification" type and 20 of the type "Reference namespace"
 Number of nodes for user-defined server interfaces, max. 	30 000
 Alarms and Conditions 	Yes
 Number of program alarms 	400
 Number of alarms for system diagnostics 	200
Further protocols	
• MODBUS	Yes; MODBUS TCP
Isochronous mode	
Equidistance	Yes
S7 message functions	
Number of login stations for message functions, max.	64
Program alarms	Yes
Number of configurable program messages, max.	10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH
Number of loadable program messages in RUN, max.	5 000
Number of simultaneously active program alarms	
 Number of program alarms 	4 000
 Number of alarms for system diagnostics 	1 000
 Number of alarms for motion technology objects 	480
Test commissioning functions	
Joint commission (Team Engineering)	Yes; Parallel online access possible for up to 10 engineering systems
Status block	Yes; Up to 16 simultaneously (in total across all ES clients)
Single step	No
Number of breakpoints	20
Status/control	
Status/control variable	Yes

Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
 Number of variables, max. 	
— of which status variables, max.	200; per job
— of which control variables, max.	200; per job
Forcing	
Forcing	Yes
 Forcing, variables 	Peripheral inputs/outputs
 Number of variables, max. 	200
Diagnostic buffer	
• present	Yes
 Number of entries, max. 	3 200
— of which powerfail-proof	1 000
Traces	
 Number of configurable Traces 	8; Up to 512 KB of data per trace are possible
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
• MAINT LED	Yes
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
Modern Control	program; selection guide via the TIA Selection Tool
 Number of available Motion Control resources for 	15 360
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 cycle of 4 ms (typical value) 	140
 Number of positioning axes at motion control cycle of 8 ms (typical value) 	192
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	
Ecological footprint	
environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	570 kg
— global warming potential, (during production) [CO2	96.9 kg
eq]	90.9 kg
global warming potential, (during operation) [CO2 eq]	483 kg
— global warming potential, (after end of life cycle)[CO2 eq]	-9.97 kg
Ambient conditions	
Ambient temperature during operation	
horizontal installation, min.	0 °C
• horizontal installation, max.	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off
vertical installation, min.	0 °C
• vertical installation, max.	40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off

e min. e max. 70 °C Altitude during operation relating to sea level e Installation altitude above sea level, max. 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual configuration / header Configuration / programming / header Programming language — LAD — FBD — Yes — STL — Yes — STL — Yes — SCL — CFC — GRAPH — Yes Know-how protection • User program protection/password protection • Block protection • Protection fevel: Fead/write protection • Protection fevel: Read/write protection • Protection level: Grapher protection • Protection level: Read/write protection • Protection level: Read/writ	Ambient temperature during storage/transportation	
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 / programming / header Programming language	• min.	-40 °C
Installation altitude above sea level, max. Soloo m; Restrictions for installation altitudes > 2 000 m, see manual configuration / neader Programming language - LAD - FBD - FBD - Yes - STL - SCL - CFC - GRAPH Yes Know-how protection - User program protection/password protection - Block protection - protection of confidential configuration data - Password for display - Protection level: Write protection - Protection level: Read/write protection - Protection level: Complete protection - Protection level: Complete protection - Iwas monitoring / header - lower limit - upper limit - See of ODK SO file, max Dassword - Depth - L4D - Yes - SCL - Yes - Protection level: Complete protection - Yes - Protection level: Complete protection - Protection level: memonitoring / header - lower limit - upper limit - 175 mm - Height - Hei	• max.	70 °C
configuration / header configuration / programming / header Programming language LAD	Altitude during operation relating to sea level	
configuration / programming / header Programming language — LAD Yes — FBD Yes — STL Yes — SCL Yes — CFC Yes — GRAPH Yes Know-how protection • User program protection/password protection Yes • Copy protection • Discription of confidential configuration data Yes • Protection of confidential configuration data Yes • Protection level: Write protection • Protection level: Complete protection Yes • Protection level: Complete protection Yes • Protection level: Complete protection Yes • Protection level: Somplete protection Yes • Protection level:	 Installation altitude above sea level, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Programming language - LAD - FBD - FBD - Yes - STL - SCL - Yes - GRAPH Yes Know-how protection • User program protection/password protection • Block protection • Block protection • Block protection • protection of confidential configuration data • protection of confidential configuration data • Protection level: Write protection • Protection level: Write protection • Protection level: Complete protection • programming / cycle time monitoring / header • lower limit • upper limit oupper limit Open Development interfaces • Size of ODK SO file, max. Dimensions Width 175 mm Height 129 mm Weights	configuration / header	
- LAD Yes - FBD Yes - STL Yes - STL Yes - STL Yes - SCL Yes - CFC Yes - GRAPH Yes - GRAPH Yes - GRAPH Yes - Group protection Yes - Group protection Yes - Copy protection Yes - Copy protection Yes - Copy protection Yes - Copy continuous - Copy protection Yes - Protection of confidential configuration data Yes - Protection for confidential configuration data Yes - Protection level: Write protection Yes - Protection level: Read/write protection Yes - Protection level: Complete protection Yes - Protection level: Complete protection Yes - Protection level: Complete protection Yes - Size of ODK SO file, max. 9.8 Mbyte - Dimensions - Size of ODK SO file, max. 9.8 Mbyte - Dimensions - Copy of the Copy	configuration / programming / header	
- FBD - STL - SCL - CFC - CFC - GRAPH Yes Know-how protection User program protection/password protection Block protection Pess Protection of confidential configuration data Protection level: Write protection Protection level: Complete protection Protection level: Complete protection Protection level: Complete protection Protection level: Complete monitoring / header Ower limit upper limit Size of ODK SO file, max. Pinnessions Width Height 175 mm Height 129 mm Weights	Programming language	
- STL - SCL - CFC - CFC - GRAPH Yes Know-how protection • User program protection/password protection • Copy protection • Block protection • Block protection • protection for confidential configuration data • Password for display • Protection level: Write protection • Protection level: Write protection • Protection level: Complete protection • Protection level: Complete protection • Protection level: Complete protection • Ses • Size of ODK SO file, max. Dimensions Width 175 mm Depth Weights	— LAD	Yes
- SCL - CFC - GRAPH Yes 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: Write protection • Protection level: Complete protection • Protection level: Complete protection • Programming / cycle time monitoring / header • lower limit • upper limit • upper limit Open Development interfaces • Size of ODK SO file, max. Dimensions Width Height Depth 129 mm Weights	— FBD	Yes
	— STL	Yes
- GRAPH Know-how protection User program protection/password protection Copy protection Block protection Pess Protection Protection of confidential configuration data Password for display Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Programming / cycle time monitoring / header I lower limit Upper limit Size of ODK SO file, max. Dimensions Width 175 mm Height Depth Weights	— SCL	Yes
Know-how protection User program protection/password protection Copy protection Block protection Protection Protection Protection Protection of confidential configuration data Password for display Protection level: Write protection Protection level: Write protection Protection level: Write protection Protection level: Complete protection Protection level: Complete protection Protection level: Complete protection Programming / cycle time monitoring / header I lower limit Upper limi	— CFC	Yes
User program protection/password protection Copy protection Block protection Pes Access protection protection of confidential configuration data Password for display Protection level: Write protection Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Protection level: Complete protection Programming / cycle time monitoring / header I lower limit Upper limit	— GRAPH	Yes
Copy protection Block protection Yes Access protection protection of confidential configuration data Password for display Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Programming / cycle time monitoring / header lower limit upper limit adjustable minimum cycle time upper limit adjustable maximum cycle time Open Development interfaces Size of ODK SO file, max. 9.8 Mbyte Dimensions Width 175 mm Height 147 mm Depth 129 mm Weights	Know-how protection	
Block protection Access protection protection of confidential configuration data Password for display Protection level: Write protection Protection level: Read/write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Programming / cycle time monitoring / header lower limit upper limit upper limit adjustable minimum cycle time Open Development interfaces Size of ODK SO file, max. 9.8 Mbyte Dimensions Width 175 mm Height 147 mm Depth 129 mm Weights	 User program protection/password protection 	Yes
Access protection • protection of confidential configuration data • Password for display • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection • Protection level: Read/write protection • Protection level: Complete protection • Protection level: Read/write protection • Protection level: Write protection • Protection level: Read/write protection • Protection level: Re	Copy protection	Yes
protection of confidential configuration data Password for display Protection level: Write protection Protection level: Read/write protection Protection level: Read/write protection Protection level: Complete protection Protection level: Complete protection Programming / cycle time monitoring / header lower limit adjustable minimum cycle time upper limit adjustable maximum cycle time Open Development interfaces Size of ODK SO file, max. 9.8 Mbyte Dimensions Width 175 mm Height 147 mm Depth 129 mm Weights	Block protection	Yes
Password for display Protection level: Write protection Protection level: Read/write protection Protection level: Read/write protection Protection level: Complete protection Programming / cycle time monitoring / header Iower limit Imper limit Iopen Development interfaces Size of ODK SO file, max. Pimensions Width Pimensions Width Pight Pimensions Weights	Access protection	
Protection level: Write protection Protection level: Read/write protection Protection level: Complete protection Programming / cycle time monitoring / header Iower limit Upper limit Upper limit Upper limit Upper lope Development interfaces Size of ODK SO file, max. Pimensions Width Upper limit Upper li	 protection of confidential configuration data 	Yes
Protection level: Read/write protection Protection level: Complete protection Programming / cycle time monitoring / header Iower limit Upper limit U	 Password for display 	Yes
Protection level: Complete protection programming / cycle time monitoring / header I lower limit Upper limit Upper limit Upper Development interfaces Size of ODK SO file, max. Uidth 175 mm Height Depth 129 mm Yes Adjustable minimum cycle time adjustable maximum cycle time 9.8 Mbyte 147 mm 129 mm Weights	 Protection level: Write protection 	Yes
programming / cycle time monitoring / header • lower limit adjustable minimum cycle time • upper limit adjustable maximum cycle time Open Development interfaces • Size of ODK SO file, max. 9.8 Mbyte Dimensions Width 175 mm Height 147 mm Depth 129 mm Weights	 Protection level: Read/write protection 	Yes
lower limit upper limit upper limit adjustable minimum cycle time Open Development interfaces Size of ODK SO file, max. 9.8 Mbyte Dimensions Width 175 mm Height 147 mm Depth 129 mm Weights	Protection level: Complete protection	Yes
upper limit open Development interfaces Size of ODK SO file, max. 9.8 Mbyte Dimensions Width 175 mm Height 147 mm Depth 129 mm Weights	programming / cycle time monitoring / header	
Open Development interfaces	• lower limit	adjustable minimum cycle time
● Size of ODK SO file, max. Dimensions	upper limit	adjustable maximum cycle time
Dimensions Width 175 mm Height 147 mm Depth 129 mm Weights 129 mm		
Width 175 mm Height 147 mm Depth 129 mm Weights	Size of ODK SO file, max.	9.8 Mbyte
Height 147 mm Depth 129 mm Weights	Dimensions	
Depth 129 mm Weights	Width	175 mm
Weights	Height	147 mm
	Depth	129 mm
Weight, approx. 2 093 g	Weights	
	Weight, approx.	2 093 g

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