## SIEMENS

## Data sheet

## 6ES7510-1SK03-0AB0

SIMATIC DP, CPU 1510SP F-1 PN for ET 200SP, central processing unit with work memory 300 KB for program and 1 MB for data, 1st interface: PROFINET IRT with 3-port switch, 25 ns bit performance, SIMATIC Memory Card required, BusAdapter required for port 1 and 2 \* \*\*\* approvals and certificates according to entry 109817615 at support.industry.siemens.com to be observed! \*\*\*\*

General information	
Product type designation	CPU 1510SP F-1 PN
HW functional status	FS01
Firmware version	V3.0
FW update possible	Yes
Product function	165
I&M data	Yes; I&M0 to I&M3
<ul> <li>Module swapping during operation (hot swapping)</li> </ul>	Yes; Multi-hot swapping
Isochronous mode	Yes; only with PROFINET; with minimum OB 6x cycle of 500 µs
Engineering with	Tes, only warrened inter, warrhannam ob ox cycle of 500 ps
STEP 7 TIA Portal configurable/integrated from	V18 (FW V3.0); with older TIA Portal versions configurable as 6ES7510-
version	1SJ01-0AB0
Configuration control	
via dataset	Yes
Control elements	
	4
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	
<ul> <li>Mains/voltage failure stored energy time</li> </ul>	10 ms
Input current	
Current consumption (rated value)	0.51 A
Current consumption, max.	0.7 A
Inrush current, max.	1.34 A; Rated value
l²t	0.3 A <sup>2</sup> ·s
Power	
Infeed power to the backplane bus	8.05 W
Power loss	
Power loss, typ.	6.5 W
Memory	
Number of slots for SIMATIC memory card	1
-	Yes
SIMATIC memory card required	Tes
Work memory         • integrated (for program)	300 kbyte
<ul> <li>integrated (for data)</li> </ul>	1 Mbyte
Load memory	T MUYO
Plug-in (SIMATIC Memory Card), max.	32 Gbyte
Backup	
maintenance-free	Yes
CPU processing times	
	25 pc
for bit operations, typ. for word operations, typ.	25 ns 32 ns
	32 ns 42 ns
for fixed point arithmetic, typ. for floating point arithmetic, typ.	42 ns 170 ns
	1/0115
CPU-blocks	

Number of elements (total)	4 000; 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.	1 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	
Number range	0 65 535
• Size, max.	300 kbyte
FC	
Number range	0 65 535
• Size, max.	300 kbyte
OB	
• Size, max.	300 kbyte
Number of free cycle OBs	100
Number of time alarm OBs	20
<ul> <li>Number of delay alarm OBs</li> </ul>	20
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	20; With minimum OB 3x cycle of 250 µs
<ul> <li>Number of process alarm OBs</li> </ul>	50
<ul> <li>Number of DPV1 alarm OBs</li> </ul>	3
<ul> <li>Number of isochronous mode OBs</li> </ul>	1
<ul> <li>Number of technology synchronous alarm OBs</li> </ul>	2
Number of startup OBs	100
<ul> <li>Number of asynchronous error OBs</li> </ul>	4
Number of synchronous error OBs	2
Number of diagnostic alarm OBs	1
Nesting depth	
per priority class	24; Up to 8 possible for F-blocks
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
IEC counter	
• Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes
S7 times	
• Number	2 048
Retentivity	
— adjustable	Yes
IEC timer	Any (ask limited by the projection of the second
Number     Detentivity	Any (only limited by the main memory)
Retentivity	Vee
— adjustable	Yes
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	256 kbyte; in total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 216 KB
Flag	16 libute
Size, max.	16 kbyte
Number of clock memories	8; 8 clock memory bit, grouped into one clock memory byte
Data blocks	Mag
Retentivity adjustable	Yes
Retentivity preset	No
Local data	64 khuto: max, 16 KP par black
• per priority class, max.	64 kbyte; max. 16 KB per block
Address area	
Number of IO modules	2 048; max. number of modules / submodules
I/O address area	
Inputs	32 kbyte; All inputs are in the process image
Outputs	32 kbyte; All outputs are in the process image
per integrated IO subsystem	
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte

Imputs (volume)     Imputs (volume)     Imputs (volume)     Rolphoness images     Imputs (volume)     Rolphoness images     Imputs (volume)     Rolphoness images     Imputs (volume)     Rolphoness images     Imputs (volume)     Rolphoness (v	per CM/CP	
- Outputs (volume) 8 kkyie 8 kkyie 8 kkyie 9 k	•	8 kbyte
• Number of subprocess images, max.     32       • Address space per module, max.     288 byte; For input and output data respectively       Address space per station     -       • Address space per station     2590 byte; for enput and outputs and outputs, depending on configuration: 2; defaults of FET 200SP modules + 512 bytes for ET 200AL modules       * Marker sconfiguration     2.440 bytes for FET 200SP modules + 512 bytes for ET 200AL modules or includes, but also by the connection of I/O via AS-i master modules or includes, but also by the connection of I/O via AS-i master modules or includes, but also by the connection of I/O via AS-i master modules or includes, but also by the connection of I/O via AS-i master modules or includes, but also by the connection of I/O via AS-i master modules or includes, but also by the connection of I/O via AS-i master modules or includes, but also by the connection of I/O via AS-i master modules or includes by the includes or includes for GO controllers       • Via CM     0       • Number of I/O controllers     1       • Via CM     0       • Quantity of operable ET 200AL modules, max.     1       • Quantity of operable ET 200AL modules, max.     1       • Quantity of operable ET 200AL modules, max.     1       • Pipe CM     Hardware clock       • Backup time     6 wk, 440 °C ambient temperature, typically       • Double time, max.     1       • Pipe CM     9       • Order     9       • Cock     9       • Type     9		•
Address space per module • Address space per module, max. 2850 byte; for input and output data respectively • Address space per station, max. • Via CM • Address per rack, max. • Modules per rack, max. • Address per station, max. • Address per rack, max. • Address	Subprocess images	
• Address space per station     288 byte; For input and output data respectively       • Address space per station, max.     2 590 byte; for central inputs and outputs; depending on configuration; 2       • Madress space per station, max.     2 590 byte; for central inputs and outputs; depending on configuration; 2       • Number of distributed IO systems     2; A distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the integration of distributed IO system is characterized not only by the number of distributed IO system is characterized not only by the number of available slots       • Quantity of operable ET 200AL modules, max.     64       • Number of PIP CMs     te number of connectable PIP CMs is only limited by the number of available slots       • Time of day     64, ki, 440 °C ambient temperature, typically       • Obvisition per day, max.     10       • Dip, naster     Yes; Via CM DP module       • DoP, paster     Yes; Via CM DP module	<ul> <li>Number of subprocess images, max.</li> </ul>	32
Address space per station         2 50 byte: for central inputs and outputs: depending on configuration; 2 48 bytes for ET 200SP modules + 512 bytes for ET 200AL modules           Year/ware configuration         32, A distributed 10 system is characterized not only byte integration if characterized not only byte integration modules, but also by the connection of 100 via AS-1 master modules or links (e.g., IE/PB-Link)           Number of DP masters         -           • Via CM         1           • Via CM         1           • Via CM         0           Rask         82; CPU + 64 modules + server module (mounting width max. 1 m) + 16           • Via CM         0           Rask         82; CPU + 64 modules + server module (mounting width max. 1 m) + 16           • Output of operable ET 200SP modules, max.         64           • Number of IP CMs         the number of connectable PIP CMs is only limited by the number of available slots           • Number of IPP CMs         the number of connectable PIP CMs is only limited by the number of available slots           • Output of operable ET 2004, modules, max.         10           • Number of PIP CMs         the number of connectable PIP CMs is only limited by the number of available slots.           • Number of PIP CMs         the number of connectable PIP CMs is only limited by the number of available slots.           • Operating hour source         64           • DP, isstem         10	Address space per module	
Address space per station, max.     2 590 byte; for central inputs and outputs: depending on configuration: 2     Address space per station, max.     Integrated     Address space per station, max.     Address space per station, max.     Address space per station, max.     Integrated     Integrated     Integrated     Integrated     Integrated     Integrated     Integra	<ul> <li>Address space per module, max.</li> </ul>	288 byte; For input and output data respectively
048 bytis for ET 2005P modules = \$12 bytes for ET 200AL modules           Number of distributed IO systems         22. A distributed IO system is obtancetorized not only by the integration modules, but also by the connection of I/O via AS-i master modules or link (e.g., IEPP-Link)           Number of DC masters         1           • Via CM         1           • Via CM         1           • Via CM         0           • Rack         22. CPU + 64 modules + server module (mounting width max. 1 m) + 16           • Countily of operable ET 2005P modules, max.         62. CPU - 64 modules + server module (mounting width max. 1 m) + 16           • Outanity of operable ET 2005P modules, max.         1           • Number of PD CMs         the number of connectable PIP CMs is only limited by the number of available sicts           • Number of PD CMs         the number of connectable PIP CMs is only limited by the number of available sicts           • Time of day         6 wk: At 40 °C ambient temperature, typically           • Doyer in part and part	Address space per station	
Number of distributed I/O system is characterized not only by the integration modules, but also by the connection of I/O via AS-i master modules or links (e.g. IEPB-Link)           Number of DP masters         1           • Via CM         1           • Integrated         1           • Via CM         1           • Via CM         1           • Via CM         0           Rack         82. CPU + 64 modules + server module (mounting width max. 1 m) + 16 ET 200AL modules           • Cuantity of operable ET 200SP modules, max.         64           • Number of IPIP CMs         1           • Number of IPIP CMs         1           • Number of PIP CMs         1           • Number of PIP CMs         1           • Number of PIP CMs         1           • Deviation per day, max.         10           • Occks gentromization         64           • Number of PIP CMs         1           • Number of PIP CMs         1           • Number of PIP CMs         90 with rule and water clock           • Backup time         6 with A4 0* Ca mathem temperature, typically           • Deviation per day, max.         10 sir Typ: 2 site Clock           • Only store         7 with X4 0* Ca mathem temperature, typically           • Deviation per day, max.         10 sir Ty	<ul> <li>Address space per station, max.</li> </ul>	
of distributed I/O via PROFINET or PROFINET and PROFINET or PROFINET and PROFINET or PROFINET and PROFINET interfaces intra (e.g., IE/PB-Link) Number of IO O via AS-i master modules or links (e.g., IE/PB-Link) Number of IO Controllers integrated integra	Hardware configuration	
• Via GM         1           Number of IO Controllers         -           • Integrated         1           • Via CM         0           Rack         B2: CPU + 64 modules + server module (mounting width max. 1 m) + 16           • Modules per rack, max.         B2: CPU + 64 modules + server module (mounting width max. 1 m) + 16           • Quantity of operable ET 200AL modules, max.         64           • Quantity of operable ET 200AL modules, max.         16           • Number of lines, max.         1           • Number of PP CMs         1           • Number of PP CMs         1           • Number of available slots         1           Operating hours counter         6 wk: At 40 °C ambient temperature, typically           • Deviation per day, max.         10           • Clock         10 s. Typ. 2 s           • Number         16           Clock with the number of connectable PIP CMs is only limited by the number of available slots           • Number of Ins.         10 s. Typ. 2 s           Operating hours counter         10           • Lo DP, naster         Yes; Via CM DP module           • In AS, master         Yes; Via CM DP module           • In AS, slave         Yes           • or Ethernet Via NTP         Yes	Number of distributed IO systems	of distributed I/O via PROFINET or PROFIBUS communication modules, but also by the connection of I/O via AS-i master modules or
Number of IO Controllers         Image and the server module (mounting width max. 1 m) + 16           First         0           Rack         82; CPU + 64 modules + server module (mounting width max. 1 m) + 16           ET 200AL modules         52; CPU + 64 modules + server module (mounting width max. 1 m) + 16           Cluantity of operable ET 200SP modules, max.         64           • Quantity of operable ET 200AL modules, max.         1           • Number of Ines, max.         1           PIP CM         the number of connectable PIP CMs is only limited by the number of available slots           Clock         5 wk; At 40 °C ambient temperature, typically           • Dyperating hours counter         6 wk; At 40 °C ambient temperature, typically           • Number         16           Clock         5 wk; At 40 °C ambient temperature, typically           • Deviation per day, max.         10           • Days counter         16           Number         16           Clock wich for the synaptic term of the synaptic term of the synaptic term of the synaptic term of term o	Number of DP masters	
integrated     i	• Via CM	1
• Via CM     0       Rack     • Modules per rack, max.     82; CPU + 64 modules + server module (mounting width max, 1 m) + 16 ET 200AL modules       • Quantity of operable ET 200SP modules, max.     64       • Number of Ines, max.     1       PIP CM     1       • Number of PIP CMs     the number of connectable PIP CMs is only limited by the number of available slots       Time of day     -       Clock     • (Ya CM) (motion per day, max.       • Division per day, max.     10       • Doviation per day, max.     10       • Doviation per day, max.     10       • Operating hours counter     6 wK, 31 40 °C ambient temperature, typically       • Doviation per day, max.     10       • Operating hours counter     10       • Number     16       Clock synchronization     Yes; Via CM DP module       • to DP, master     Yes; Via CM DP module       • to DP, master     Yes       • in AS, slave     Yes       • in AS, slave     Yes       • Diretraces     1, Via CM DP module       • Diretraces	Number of IO Controllers	
Rack         Bit Construction           • Modules per rack, max.         82, CPU + 64 modules + server module (mounting width max. 1 m) + 16 ET 200AL modules           • Quantity of operable ET 200AL modules, max.         64           • Quantity of operable ET 200AL modules, max.         16           • Number of lines, max.         1           PIP CM         the number of connectable PIP CMs is only limited by the number of available slots           Time of day         the number of connectable PIP CMs is only limited by the number of available slots           Time of day         Elecket           Clock         Elecket           • Number of PAP CMs         6 wk; At 40 °C amblent temperature, typically           • Deviation per day, max.         10 s; Typ. 2 s           Operating hours counter         6           • Number         16           Clock synchronization         Yes; Via CM DP module           • to DP, slave         Yes; Via CM DP module           • in AS, slave:         Yes           • on Ethernet via NTP         Yes           Interface         Nomber of PROFINET interfaces           • Number of PROFINET interfaces         1. Via CM DP module           • in AS, slave:         Yes           • in AS, slave:         Yes           • in AS deptrice (PROFINET) <td><ul> <li>integrated</li> </ul></td> <td>1</td>	<ul> <li>integrated</li> </ul>	1
Modules per rack, max.     Set CPU + 64 modules + server module (mounting width max. 1 m) + 16     ET 200AL modules     Countity of operable ET 200SP modules, max.     Quantity of operable ET 200AL modules, max.     Aumber of lines, max.     Aumber of PIP CMs     Number of PIP CMs     Hardware statement of connectable PIP CMs is only limited by the number of available stots     Time of day     Clock         Time of PROFINET interface         Time of PROFINET interfaces         Time of the day	Via CM	0
ET 200AL modules ET 200AL modules Ouantity of operable ET 200AL modules, max. Ouantity of operable ET 200AL modules, max. I Ouantity of operable ET 200AL modules I operable ET 200AL module  Ves Via CM DP module I outper of PIP CMs I of DP, master Ves, Via CM DP module Ves, Via CM DP module I on DP, slave Ves Interface Interface I Number of PROFINET I interfaces Vis CM DP module Ves Interface I Number of PROFINET I interfaces Vis CM DP module Number of PROFINET I interfaces Vis CM DP module Ves Ves Ves Ves Ves Ves Ves Ves Ves Ve	Rack	
• Quantily of operable ET 200AL modules, max.     1       • Number of lines, max.     1       PP CM     the number of connectable PIP CMs is only limited by the number of available slots <b>Time of day</b> the number of connectable PIP CMs is only limited by the number of available slots <b>Time of day</b> Hardware clock       • Dype A     0 structure       • Operating hours counter     6 wk; At 40 °C ambient temperature, typically       • Deviation per day, max.     10 structure       • Operating hours counter     6       • Number     16       Clock synchronization     Yes       • supported     Yes       • to DP, master     Yes, Via CM DP module       • to DP, slave     Yes       • on Rtherment Via NTP     Yes       Interfaces     1       Number of PROFINET interfaces     1       Number of PROFINET interfaces     1       Number of PROFINET interfaces     1       Number of prots     1; Via CM DP module       Optical interface     No <b>Interface</b> No <b>Interface</b> Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45       • RU J45 (Ethernet)     3; 1, Integr. + 2. via BusAdapter       • RU J45 (Ethernet)     Yes; IPV4       • PROFINET IO Controller     Yes       • PROFINET		ET 200AL modules
• Number of lines, max.       1         PIP CM       the number of connectable PIP CMs is only limited by the number of available slots         Time of day       Clock         • Number of PIP CMs       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       Yes         • Number of PROFINET       Yes; Via CM DP module         • to DP, master       Yes         • to DP, slave       Yes; Via CM DP module         • in AS, inster       Yes         • and S, slave       Yes         • on PROFINET interfaces       1         Number of PROFINET interfaces       1         Number of PROFIBUS interfaces       1         • Interface types       Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Number of profs       3; 1, integr. + 2, via BusAdapter         • Number of PROFINETIO       Yes; IPV4         • Nondapter (PROFINET)       Yes         • BusAdapter (PROFINET IO Controller       Yes         • IProtocol       Yes         • IProtocol       Yes         • SIMATIC com		
PIP CM         • Number of PIP CMs         the number of connectable PIP CMs is only limited by the number of available slots         Time of day         Clock         • Type         • Backup time         • Deviation per day, max.         10 s; Typ. 2 s         Operating hours counter         • Number         • Number         16         Clock synchronization         • supported         • to DP, master         • to DP, master         • to DP, slave         Yes         Interfaces         Number of PROFINET interfaces         1; Via CM DP module         Optical interface         No         1Interface         PROFINET interfaces         • RJ 45 (Ethernet)         Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Number of ports         Si 1, integr. + 2. Via BusAdapter: BA 2x RJ45, BA 2x FC, BA 2x M12         Protocol         • PROFINET IO		
• 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: kt 40 °C ambient temperature, typically         • Deviation per day, max.       10 s; Typ: 2 s         Operating hours counter       16         • Number       16         Clock synchronization       Yes; Via CM DP module         • to DP, slave       Yes; Via CM DP module         • in AS, slave       Yes         • on Ethernet via NTP       Yes         Interfaces       1         Number of PROFIBUS interfaces       1         Number of PROFIBUS interfaces       1; Via CM DP module         • RUPFIBUS interfaces       1; Via CM DP module         • Rupper of PROFIBUS interfaces       1; Via CM DP module         • Interface       No         • Interface types       • es; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Interface types       • yes; Compatible BusAdapter         • Interface types       Yes; Compatible BusAdapter         • ROFINET IO Controller       Yes         • ROFINET IO Controller       Yes         • ROFINET IO Controller       Yes         •		1
available slots         Time of day         Clock         • Type       Hardware clock         • Backup time       6 wtk: At 40 °C ambient temperature, typically         • Devrating hours counter       10 s; Typ.: 2 s         • Number       16         Clock synchronization       *         • supported       Yes; Via CM DP module         • to DP, master       Yes; Via CM DP module         • to DP, slave       Yes         • on Ethernet via NTP       Yes         Valido of PROFIBUS interfaces       1; Via CM DP module         Optical interface       No         Interface types         • RJ 45 (Ethernet)       Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Number of ports       3; 1. integr. + 2. via BusAdapter BA 2x RJ45         • Number of ports       S; 1. integr. + 2. via BusAdapter         • Number of ports       Yes; Optionality also encrypted         • Protocol       Yes; IPv4         • PROFINET IO Controller       Yes         • ROFINET IO Device       Yes         • SIMATI		
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       16         • Number       16         Clock synchronization       *es; Via CM DP module         • to DP, master       Yes; Via CM DP module         • to DP, slave       Yes; Via CM DP module         • to DP, slave       Yes         • in AS, master       Yes         • on Ethernet via NTP       Yes         Interfaces       1         Number of PROFINET interfaces       1         Number of PROFIBUS interfaces       1; Via CM DP module         Optical interface       No         1.Interface       No         2.Interface types       *es; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Number of ports       3; 1. integr. + 2. via BusAdapter BA 2x RJ45         • Number of ports       3; 1. integr. + 2. via BusAdapter BA 2x RJ45         • Number of ports       3; 2. integr. + 2. via BusAdapter         • PROFINET IO Controller       Yes         • PROFINET IO Controller       Yes         • PROFINET IO Device       Yes         • Open IE communication       Yes; Optiona		
Type Hardware clock     Backup time 6 wt; At 40 °C ambient temperature, typically     Deviation per day, max.     10 s; Typ.: 2 s  Operating hours counter      Number 16  Clock synchronization     supported Yes     to DP, master Yes; Via CM DP module     to DP, slave Yes; Via CM DP module     in AS, master Yes     in AS, slave Yes     interface      Interface      Interface Ypes     integrated switch Yes     integrated S	Time of day	
Backup time     Backup ti	Clock	
• Deviation per day, max.       10 s; Typ.: 2 s         Operating hours counter       16         • Number       16         Clock synchronization       Yes         • to DP, master       Yes; Via CM DP module         • to DP, slave       Yes; Via CM DP module         • to DP, slave       Yes; Via CM DP module         • in AS, master       Yes         • on Ethernet via NTP       Yes         Interfaces       1         Number of PROFINET interfaces       1         Number of PROFINET interfaces       1; Via CM DP module         Optical interface       No         Optical interface       No         10 terface       No         11 therface types       1; Via CM DP module         • Number of prOFINET interfaces       1; Via CM DP module         Optical interface       No         0 pottal interface       No         10 terface       1         • Number of ports       3; 1, integr. + 2, via BusAdapter BA 2x RJ45         • Number of ports       3; 1, integr. + 2, via BusAdapter         • Number of ports       3; 1, integr. + 2, via BusAdapter         • Protocol       Yes; IPV4         • PROFINET IO Controller       Yes         • PROFINET	• Туре	Hardware clock
Operating hours counter       16         Clock synchronization       16         Clock synchronization       Yes         • to DP, master       Yes; Via CM DP module         • to DP, slave       Yes; Via CM DP module         • in AS, master       Yes         • on Ethernet via NTP       Yes         Interfaces       1         Number of PROFINET interfaces       1; Via CM DP module         Optical interface       No         Interfaces       1; Via CM DP module         Number of PROFIBUS interfaces       1; Via CM DP module         Optical interface       No         Interface types       •         • RJ 45 (Ethernet)       Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Number of ports       3; 1. integr. + 2. via BusAdapter         • integrated switch       Yes         • BusAdapter (PROFINET)       Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12         Protocols       *         • IP protocol       Yes; IPv4         • PROFINET IO Controller       Yes         • SIMATIC communication       Yes         • Open IE communication       Yes         • Open IE communication       Yes         • Web server       Yes	Backup time	6 wk; At 40 °C ambient temperature, typically
• Number       16         Clock synchronization       Yes         • supported       Yes; Via CM DP module         • to DP, slave       Yes; Via CM DP module         • to DP, slave       Yes; Via CM DP module         • in AS, master       Yes         • on Ethernet via NTP       Yes         Interfaces       1         Number of PROFINET interfaces       1         Number of PROFIBUS interfaces       1; Via CM DP module         Optical interface       No         1. Interface       No         1. Interface types       •         • R2 45 (Ethernet)       Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Number of ports       3; 1. integr. + 2. via BusAdapter         • integrated switch       Yes         • BusAdapter (PROFINET)       Yes; IPv4         • PROFINET IO Controller       Yes         • PROFINET IO Device       Yes         • SIMATIC communication       Yes         • Optical communication       Yes; Optionally also encrypted         • Web server       Yes         • PROFINET IO Controller       Yes         • PROFINET IO Controller       Yes         • PROFINET IO Controller       Yes         • PROFINET IO Co		10 s; Typ.: 2 s
Clock synchronization       Yes         • supported       Yes; Via CM DP module         • to DP, slave       Yes; Via CM DP module         • to DP, slave       Yes; Via CM DP module         • in AS, master       Yes         • in AS, slave       Yes         • on Ethernet via NTP       Yes         Interfaces       1         Number of PROFIBUS interfaces       1         Number of PROFIBUS interfaces       1; Via CM DP module         Optical interface       No         1. Interface       No         1. Interface types       -         • RJ 45 (Ethernet)       Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Number of ports       3; 1. integr. + 2. via BusAdapter         • integrated switch       Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12         Protocols       -         • IP protocol       Yes; IPv4         • PROFINET IO Controller       Yes         • SIMATIC communication       Yes         • Open IE communication       Yes; Optionally also encrypted         • Web server       Yes         • Media redundancy       Yes         PROFINET IO Controller       Yes         • Media redundancy       Yes	Operating hours counter	
• supported       Yes         • to DP, master       Yes; Via CM DP module         • to DP, slave       Yes; Via CM DP module         • to AS, master       Yes         • in AS, slave       Yes         • on Ethernet via NTP       Yes         Interfaces       1         Number of PROFIBUS interfaces       1         Number of PROFIBUS interfaces       1; Via CM DP module         Optical interface       No         1. Interface       No         Interface types       -         • RJ 45 (Ethernet)       Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Number of ports       3; 1. integr. + 2. via BusAdapter         • BusAdapter (PROFINET)       Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12         Protocols       -         • IP protocol       Yes; IPv4         • PROFINET IO Controller       Yes         • SIMATIC communication       Yes         • Open IE communication       Yes; Optionally also encrypted         • Web server       Yes         • Media redundancy       Yes         • PROFINET IO Controller       Yes         • Open IE controller       Yes         • Media redundancy       Yes		16
• to DP, masterYes; Via CM DP module• to DP, slaveYes; Via CM DP module• in AS, masterYes• in AS, slaveYes• on Ethemet via NTPYesInterfacesNumber of PROFINET interfaces1Number of PROFIBUS interfaces1Number of PROFIBUS interfaces1; Via CM DP moduleOptical interfaceNoInterface types• RJ 45 (Ethernet)Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45• Number of ports3; 1. integr. + 2. via BusAdapter• integrated switchYes• BusAdapter (PROFINET)Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12ProtocolsIP protocol• IP protocolYes; IPv4• PROFINET IO DeviceYes• SIMATIC communicationYes• Open IE communicationYes• Web serverYes• Media redundancyYes• PROFINET IO ControllerYes• Media r		
• to DP, slaveYes; Via CM DP module• in AS, masterYes• in AS, slaveYes• on Ethernet via NTPYesInterfacesNumber of PROFINET interfaces1Number of PROFIBUS interfaces1Number of PROFIBUS interfaces1; Via CM DP moduleOptical interfaceNoInterface typesYes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45• RJ 45 (Ethernet)Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45• Number of ports3; 1. integr. + 2. via BusAdapter• integrated switchYes• BusAdapter (PROFINET)Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12ProtocolsYes; IPv4• PROFINET IO ControllerYes• PROFINET IO DeviceYes• SIMATIC communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYes• PROFINET IO ControllerYes• PROFINET IO ControllerYes• PROFINET IO ControllerYes• PROFINET IO ControllerYes• Media redundancyYes• PROFINET IO ControllerYes• Media redundancyYes• PROFINET IO ControllerYes• PROFINET IO ControllerYes• Media redundancyYes• PRO		
• in AS, master       Yes         • in AS, slave       Yes         • on Ethernet via NTP       Yes         Interfaces       Interfaces         Number of PROFINET interfaces       1         Number of PROFIBUS interfaces       1; Via CM DP module         Optical interface       No         Interface types         • RJ 45 (Ethernet)       Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Number of ports       3; 1. integr. + 2. via BusAdapter         • integrated switch       Yes         • BusAdapter (PROFINET)       Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12         Protocols       IP protocol         • IP protocol       Yes; IPv4         • PROFINET IO Controller       Yes         • SIMATIC communication       Yes; Optionally also encrypted         • Web server       Yes         • Media redundancy       Yes         PROFINET IO Controller       Yes         • Open IE communication       Yes         • PROFINET IO Controller       Yes         • Rudia redundancy       Yes		
• in AS, slaveYes• on Ethernet via NTPYesInterfacesINumber of PROFINET interfaces1Number of PROFIBUS interfaces1; Via CM DP moduleOptical interfaceNo1. InterfaceNo1. Interface typesInterface types• RJ 45 (Ethernet)Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45• Number of ports3; 1. integr. + 2. via BusAdapter• integrated switchYes• BusAdapter (PROFINET)Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12ProtocolsYes• IP protocolYes; IPv4• PROFINET IO ControllerYes• SIMATIC communicationYes• Open IE communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYes• Media redundancyYes• Media redundancyYes• Media redundancyYes• Media redundancyYes• Media redundancyYes• Media redundancy <td></td> <td></td>		
• on Ethernet via NTPYesInterfacesNumber of PROFINET interfaces1Number of PROFIBUS interfaces1; Via CM DP moduleOptical interfaceNoInterface types• RJ 45 (Ethernet)Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45• Number of ports3; 1. integr. + 2. via BusAdapter• integrated switchYes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12ProtocolsYes; IPv4• IP protocolYes; IPv4• PROFINET IO ControllerYes• SIMATIC communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYes• PROFINET IO ControllerYes• PROFINET IO ControllerYes• RUMATIC communicationYes• Open IE communicationYes• PROFINET IO ControllerYes• Media redundancyYes• PROFINET IO ControllerYes• Media redundancyYes• PROFINET IO ControllerYes• Media redundancyYes• PROFINET IO ControllerYes• PROFINET IO ControllerYes• Media redundancyYes• PROFINET IO ControllerYes• PROFINET IO ControllerYes• Media redundancyYes• PROFINET IO ControllerYes• PROFINET IO ControllerYes• Open IE communicationYes• Media redundancyYes• PROFINET IO Contr		
Interfaces       Number of PROFINET interfaces     1       Number of PROFIBUS interfaces     1; Via CM DP module       Optical interface     No       Interface     No       Interface     Interface       Interface types     Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45       • RJ 45 (Ethernet)     Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45       • Number of ports     3; 1. integr. + 2. via BusAdapter       • integrated switch     Yes       • BusAdapter (PROFINET)     Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12       Protocols     IP protocol       • IP protocol     Yes; IPv4       • PROFINET IO Controller     Yes       • SIMATIC communication     Yes       • Open IE communication     Yes; Optionally also encrypted       • Web server     Yes       • Media redundancy     Yes       PROFINET IO Controller     Yes		
Number of PROFINET interfaces       1         Number of PROFIBUS interfaces       1; Via CM DP module         Optical interface       No         1. Interface       No         Interface         Interface       No         1. Interface       No         Interface       Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         Number of ports       3; 1. integr. + 2. via BusAdapter         • Integrated switch       Yes         • BusAdapter (PROFINET)       Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12         Protocol       Yes; IPv4         • PROFINET IO Controller       Yes         • PROFINET IO Device       Yes         • Media redundancy       Yes		Yes
Number of PROFIBUS interfaces1; Via CM DP module NoOptical interfaceNoInterfaceInterface types• RJ 45 (Ethernet)Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45 3; 1. integr. + 2. via BusAdapter• Number of ports3; 1. integr. + 2. via BusAdapter• Integrated switchYes• BusAdapter (PROFINET)Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12Protocols• IP protocolYes; IPv4• PROFINET IO ControllerYes• SIMATIC communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYes• Media redundancyYes		
Optical interfaceNo1. InterfaceInterface types• RJ 45 (Ethernet)Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45• Number of ports3; 1. integr. + 2. via BusAdapter• integrated switchYes• BusAdapter (PROFINET)Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12ProtocolsIP protocol• IP protocolYes; IPv4• PROFINET IO ControllerYes• SIMATIC communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYes• ROFINET IO ControllerYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYes• ServicesYes		
1. Interface         Interface types         • RJ 45 (Ethernet)       Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Number of ports       3; 1. integr. + 2. via BusAdapter         • integrated switch       Yes         • BusAdapter (PROFINET)       Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12         Protocols       IP protocol         • IP protocol       Yes; IPv4         • PROFINET IO Controller       Yes         • SIMATIC communication       Yes; Optionally also encrypted         • Web server       Yes         • Media redundancy       Yes         PROFINET IO Controller       Yes		
Interface types         • RJ 45 (Ethernet)       Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45         • Number of ports       3; 1. integr. + 2. via BusAdapter         • integrated switch       Yes         • BusAdapter (PROFINET)       Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12         Protocols       IP protocol         • IP protocol       Yes; IPv4         • PROFINET IO Controller       Yes         • SIMATIC communication       Yes; Optionally also encrypted         • Web server       Yes         • Media redundancy       Yes         PROFINET IO Controller       Yes         • SIMATIC communication       Yes         • Res       Yes         • Media redundancy       Yes	Optical interface	No
• RJ 45 (Ethernet)Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45• Number of ports3; 1. integr. + 2. via BusAdapter• integrated switchYes• BusAdapter (PROFINET)Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12ProtocolsYes; IPv4• IP protocolYes; IPv4• PROFINET IO ControllerYes• SIMATIC communicationYes• Open IE communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYes• ServicesYes	1. Interface	
• RJ 45 (Ethernet)Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45• Number of ports3; 1. integr. + 2. via BusAdapter• integrated switchYes• BusAdapter (PROFINET)Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12ProtocolsYes; IPv4• IP protocolYes; IPv4• PROFINET IO ControllerYes• SIMATIC communicationYes• Open IE communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYes• ServicesYes	Interface types	
• Number of ports3; 1. integr. + 2. via BusAdapter• integrated switchYes• BusAdapter (PROFINET)Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12Protocols• IP protocolYes; IPv4• PROFINET IO ControllerYes• PROFINET IO DeviceYes• SIMATIC communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYes• Redia redundancyYes• Redia redundancyYes• Services		Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45
• BusAdapter (PROFINET)Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12Protocols• IP protocolYes; IPv4• PROFINET IO ControllerYes• PROFINET IO DeviceYes• SIMATIC communicationYes; Optionally also encrypted• Open IE communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYesServicesYes		
Protocols       Yes; IPv4         PROFINET IO Controller       Yes         PROFINET IO Device       Yes         SIMATIC communication       Yes; Optionally also encrypted         Open IE communication       Yes; Optionally also encrypted         Web server       Yes         Media redundancy       Yes         PROFINET IO Controller       Yes         Services       Yes	<ul> <li>integrated switch</li> </ul>	Yes
• IP protocolYes; IPv4• PROFINET IO ControllerYes• PROFINET IO DeviceYes• SIMATIC communicationYes; Optionally also encrypted• Open IE communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYesServicesYes	BusAdapter (PROFINET)	Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12
• PROFINET IO ControllerYes• PROFINET IO DeviceYes• SIMATIC communicationYes• Open IE communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYesPROFINET IO ControllerYesServicesYes	Protocols	
• PROFINET IO DeviceYes• SIMATIC communicationYes• Open IE communicationYes; Optionally also encrypted• Web serverYes• Media redundancyYes• PROFINET IO ControllerYesServicesYes	IP protocol	Yes; IPv4
• SIMATIC communication     Yes       • Open IE communication     Yes; Optionally also encrypted       • Web server     Yes       • Media redundancy     Yes       PROFINET IO Controller     Yes	PROFINET IO Controller	Yes
Open IE communication Yes; Optionally also encrypted     Web server Yes     Media redundancy Yes  PROFINET IO Controller     Services	PROFINET IO Device	Yes
Web server Yes     Media redundancy Yes  PROFINET IO Controller Services	<ul> <li>SIMATIC communication</li> </ul>	Yes
Media redundancy Yes PROFINET IO Controller Services		
PROFINET IO Controller Services		Yes
Services	•	Yes
	PROFINET IO Controller	
- PG/OP communication Yes		
	— PG/OP communication	Yes

<ul> <li>— Isochronous mode</li> </ul>	
	Yes
— Direct data exchange	Yes; Requirement: IRT and isochronous mode (MRPD optional)
— IRT	Yes
— PROFlenergy	Yes; per user program
<ul> <li>Prioritized startup</li> </ul>	Yes; Max. 32 PROFINET devices
<ul> <li>Number of connectable IO Devices, max.</li> </ul>	128; In total, up to 512 distributed I/O devices can be connected via AS- i, PROFIBUS or PROFINET
<ul> <li>Of which IO devices with IRT, max.</li> </ul>	64
<ul> <li>— Number of connectable IO Devices for RT, max.</li> </ul>	128
— of which in line, max.	128
— Number of IO Devices that can be	8; in total across all interfaces
simultaneously activated/deactivated, max.	
- Number of IO Devices per tool, max.	8
— Updating times	The minimum value of the update time also depends on communication
	share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data
Update time for IRT	
— for send cycle of 250 μs	250 µs to 4 ms; Note: In the case of IRT with isochronous mode, the
	minimum update time of 500 $\mu s$ of the isochronous OB is decisive
— for send cycle of 500 μs	500 $\mu s$ to 8 ms; Note: In the case of IRT with isochronous mode, the
	minimum update time of 625 $\mu s$ of the isochronous OB is decisive
— for send cycle of 1 ms	1 ms to 16 ms
— for send cycle of 2 ms	2 ms to 32 ms
— for send cycle of 4 ms	4 ms to 64 ms
— With IRT and parameterization of "odd" send	Update time = set "odd" send clock (any multiple of 125 µs: 375 µs, 625
cycles	μs 3 875 μs)
Update time for RT	
— for send cycle of 250 μs	250 µs to 128 ms
— for send cycle of 500 μs	500 µs to 256 ms
— for send cycle of 1 ms	1 ms to 512 ms
— for send cycle of 2 ms	2 ms to 512 ms
— for send cycle of 4 ms	4 ms to 512 ms
PROFINET IO Device	
Services	
— PG/OP communication	Yes
— Isochronous mode	No
— IRT	Yes
— PROFlenergy	
	Yes; per user program
<ul> <li>— Shared device</li> </ul>	Yes
Number of IO Operates liens with the second device	
<ul> <li>— Number of IO Controllers with shared device, max</li> </ul>	4
max.	
max. — activation/deactivation of I-devices	Yes; per user program
max. — activation/deactivation of I-devices — Asset management record	
max. — activation/deactivation of I-devices — Asset management record 2. Interface	Yes; per user program
max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types	Yes; per user program Yes; per user program
max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types • RS 485	Yes; per user program
max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types	Yes; per user program Yes; per user program
max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types • RS 485	Yes; per user program Yes; per user program Yes; Via CM DP module
max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types • RS 485 • Number of ports	Yes; per user program Yes; per user program Yes; Via CM DP module
max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types • RS 485 • Number of ports Protocols	Yes; per user program Yes; per user program Yes; Via CM DP module 1
max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types • RS 485 • Number of ports Protocols • PROFIBUS DP master	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes
max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types • RS 485 • Number of ports Protocols • PROFIBUS DP master • PROFIBUS DP slave	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes
max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types • RS 485 • Number of ports Protocols • PROFIBUS DP master • PROFIBUS DP slave • SIMATIC communication	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes
max. — activation/deactivation of I-devices — Asset management record 2. Interface Interface types — RS 485 — Number of ports Protocols — PROFIBUS DP master — PROFIBUS DP slave — SIMATIC communication PROFIBUS DP master	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes
max. 	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes Yes Yes
max. 	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes Yes Yes Yes In total, up to 512 distributed I/O devices can be connected via AS-
max. 	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes Yes Yes Yes In total, up to 512 distributed I/O devices can be connected via AS-
max. 	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes 48; Of which 4 each reserved for ES and HMI 125; In total, up to 512 distributed I/O devices can be connected via AS- i, PROFIBUS or PROFINET
max. 	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes 48; Of which 4 each reserved for ES and HMI 125; In total, up to 512 distributed I/O devices can be connected via AS- i, PROFIBUS or PROFINET
max. 	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes 48; Of which 4 each reserved for ES and HMI 125; In total, up to 512 distributed I/O devices can be connected via AS- i, PROFIBUS or PROFINET
max. 	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes 48; Of which 4 each reserved for ES and HMI 125; In total, up to 512 distributed I/O devices can be connected via AS- i, PROFIBUS or PROFINET Yes No
max. 	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes 48; Of which 4 each reserved for ES and HMI 125; In total, up to 512 distributed I/O devices can be connected via AS- i, PROFIBUS or PROFINET Yes No
max. 	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes 48; Of which 4 each reserved for ES and HMI 125; In total, up to 512 distributed I/O devices can be connected via AS- i, PROFIBUS or PROFINET Yes No No Yes
max. 	Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes 48; Of which 4 each reserved for ES and HMI 125; In total, up to 512 distributed I/O devices can be connected via AS- i, PROFIBUS or PROFINET Yes No

	Vec
<ul> <li>Autocrossing</li> <li>Industrial Ethernet status LED</li> </ul>	Yes
RS 485	Tes
Transmission rate, max.	12 Mbit/s
Protocols	
PROFIsafe	Yes; V2.4 / V2.6
Number of connections	400 via interrete distorfaces of the ODU and some shed ODs / OMs
Number of connections, max.	128; via integrated interfaces of the CPU and connected CPs / CMs
Number of connections reserved for ES/HMI/web	10
Number of connections via integrated interfaces	88
Number of connections per CP/CM	32
Number of S7 routing paths	16
Redundancy mode	Vee
H-Sync forwarding	Yes
Media redundancy	Vaci anticuia Rua Adantar
— Media redundancy	Yes; only via BusAdapter
— MRP	Yes; MRP Automanager according to IEC 62439-2 Edition 2.0, MRP Manager; MRP Client
- MRP interconnection, supported	Yes; as MRP ring node according to IEC 62439-2 Edition 3.0
— MRPD	Yes; Requirement: IRT
— Switchover time on line break, typ.	200 ms; For MRP, bumpless for MRPD
— Number of stations in the ring, max.	50
SIMATIC communication	
PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
• S7 routing	Yes
Data record routing	Yes
<ul> <li>S7 communication, as server</li> </ul>	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	
<ul> <li>ISO-on-TCP (RFC1006)</li> </ul>	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	
Runtime license required	Yes; "Small" license required
• OPC UA Client	Yes; Data Access (registered Read/Write), Method Call
Application authentication	Yes
— Security policies	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
— User authentication	"anonymous" or by user name & password
- Number of connections, max.	4
<ul> <li>Number of nodes of the client interfaces, recommended max.</li> </ul>	1 000
<ul> <li>— Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C max.</li> </ul>	300
<ul> <li>— Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max.</li> </ul>	20
— Number of elements for one call of	100
OPC_UA_MethodGetHandleList, max.	

<ul> <li>Number of simultaneous calls of the client instructions for session management, per connection may</li> </ul>	1
connection, max. — Number of simultaneous calls of the client instructions for data access, per connection, max.	5
	5 000
— Number of registerable nodes, max.	100
<ul> <li>— Number of registerable method calls of OPC_UA_MethodCall, max.</li> </ul>	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
<ul> <li>Application authentication</li> </ul>	Yes
<ul> <li>— Security policies</li> </ul>	available security policies: None, Basic128Rsa15, Basic256Rsa15,
	Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss
<ul> <li>User authentication</li> </ul>	"anonymous" or by user name & password
<ul> <li>— GDS support (certificate management)</li> </ul>	Yes
<ul> <li>Number of sessions, max.</li> </ul>	32
<ul> <li>Number of accessible variables, max.</li> </ul>	50 000
<ul> <li>— Number of registerable nodes, max.</li> </ul>	10 000
<ul> <li>Number of subscriptions per session, max.</li> </ul>	50
— Sampling interval, min.	100 ms
— Publishing interval, min.	200 ms
— Number of server methods, max.	20
<ul> <li>— Number of inputs/outputs per server method,</li> </ul>	20
max. — Number of monitored items, recommended	4 000; for 1 s sampling interval and 1 s send interval
max.	
— 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	15 000
interfaces, max.	
<ul> <li>Alarms and Conditions</li> </ul>	Yes
<ul> <li>— Number of program alarms</li> </ul>	100
— Number of alarms for system diagnostics	50
Further protocols	
Further protocols <ul> <li>MODBUS</li> </ul>	50 Yes; MODBUS TCP
Further protocols	
Further protocols <ul> <li>MODBUS</li> </ul>	
Further protocols <ul> <li>MODBUS</li> </ul> S7 message functions	Yes; MODBUS TCP
Further protocols <ul> <li>MODBUS</li> </ul> S7 message functions Number of login stations for message functions, max.	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH
Further protocols <ul> <li>MODBUS</li> </ul> S7 message functions Number of login stations for message functions, max. Program alarms	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm"
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH
Further protocols         • MODBUS         S7 message functions         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH
Further protocols         • MODBUS       S7 message functions         S7 message functions       Number of login stations for message functions, max.         Program alarms       Number of configurable program messages, max.         Number of loadable program messages in RUN, max.       Number of simultaneously active program alarms	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500
Further protocols         • MODBUS       S7 message functions         S7 message functions       Number of login stations for message functions, max.         Program alarms       Number of configurable program messages, max.         Number of loadable program messages in RUN, max.       Number of simultaneously active program alarms         • Number of program alarms       • Number of program alarms	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of alarms for system diagnostics	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commissioning functions	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160 Yes; Parallel online access possible for up to 5 engineering systems
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission ing functions         Joint commission (Team Engineering)	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160
Further protocols         • MODBUS       S7 message functions         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients)
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No
Further protocols         • MODBUS       S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of breakpoints	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of breakpoints         Status/control	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe),
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of breakpoints         Status/control         • Status/control variable         • Variables	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes; without fail-safe
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of breakpoints         Status/control         • Status/control variable         • Variables         • Number of variables, max.	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of breakpoints         Status/control         • Status/control variable         • Variables         • Number of variables, max.         - of which status variables, max.	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of breakpoints         Status/control         • Status/control variable         • Variables         • Number of variables, max.         - of which status variables, max.	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of breakpoints         Status/control         • Status/control variable         • Variables         • Number of variables, max.         — of which status variables, max.         — of which control variables, max.         — of which control variables, max.	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job 200; per job
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of breakpoints         Status/control         • Status/control variable         • Variables         • Number of variables, max.         - of which status variables, max.         - of which control variables, max.	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job 200; per job 200; per job
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of breakpoints         Status/control         • Status/control variable         • Variables         • Number of variables, max.         - of which status variables, max.         - of which control variables, max.         - Forcing         • Forcing         • Forcing	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job 200; per job Yes; without fail-safe peripheral inputs/outputs (without fail-safe)
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of variables         • Variables         • Number of variables, max.         — of which status variables, max.         — of which control variables, max.         — of which control variables, max.         Forcing         • Forcing         • Forcing         • Forcing, variables         • Number of variables, max.	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job 200; per job 200; per job
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of breakpoints         Status/control         • Status/control variable         • Variables         • Number of variables, max.         — of which status variables, max.         — of which control variables, max.         Diagnostic buffer	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job 200; per job 200; per job 200; per job 200; per job
Further protocols         • MODBUS         S7 message functions         Number of login stations for message functions, max.         Program alarms         Number of configurable program messages, max.         Number of loadable program messages in RUN, max.         Number of simultaneously active program alarms         • Number of program alarms         • Number of program alarms         • Number of alarms for system diagnostics         • Number of alarms for motion technology objects         Test commission (Team Engineering)         Status block         Single step         Number of variables         • Variables         • Number of variables, max.         — of which status variables, max.         — of which control variables, max.         — of which control variables, max.         Forcing         • Forcing         • Forcing         • Forcing, variables         • Number of variables, max.	Yes; MODBUS TCP 32 Yes 5 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH 2 500 600 100 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8 Yes; without fail-safe inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters 200; per job 200; per job Yes; without fail-safe peripheral inputs/outputs (without fail-safe)

Number of configurable Traces         4. Up to 512 KB of data per trace are possible           Interrupt diagnostic status information           Eigenostic status information           Eigenostic status information           Eigenostic status information           Version           Version           Version           Main TLED         Yes           Monit ong the supply outging (PWR-LED)         Yes           Monit on gring the supply outging (PWR-LED)         Yes           Supported to Exclusion display LINK TXRX         Yes           Supported to Exclusion display LINK TXRX         Yes           Supported to Exclusion display LINK TXRX         Yes           Motion Control         Yes, Nutc: The muther of Exclusion gring assistic to cycle time of the PLC program; selection gring assistic to cycle time of the PLC program; selection gring assistic to cycle and assistic cycle and assistic to cycle and assistic to cycle and assistic cycle and assistic to cycle and assistic cycle and assistic cycle and assistic cycle and assistic to cycle and assistic cycle and assi	— of which powerfail-proof	500
Interrupt (diapostics indicates LED         Ves           ERROR LED         Yes           • RUNSTOP LED         Yes           • MAINT LED         Yes           • Monitoring of the supply voltage (PVR-LED)         Yes           • Connection display LINK TORX         Yes           Supported technology objects         Midion Control           Midion 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 technology objects         40           - per speed-controlled axis         80           - per speed controlled axis         80           - per probe         40           - per probe         40           - per probe         40           - per probe         40           - Per solutioning axis         11           - que of am (typical value)         14           - Aumber of positioning axes at motion control que of am (typical value)         14           - PROS         Yes: Universal PID controller with integrated optimization           + PID_Sistip         Yes: Donothiler with integrated optimization for valves           + PID_Sistip         Yes           - Hight-gasted countrol         Yes		4: Up to 512 KB of data per trace are possible
Diagnostics indication LED         Yes           • RUNKTOP LED         Yes           • RENOR LED         Yes           • MAINT LED         Yes           • Connection display LINK VIKX         Yes           Supported technology objects         Yes           Motion of splay LINK VIKX         Yes           Supported technology objects         Yes, Note: The number of technology objects affects the cycle time of the FLC program, selection guide via the TIA Selection Tool           • Number of realizing attraction display LINK VIKX         Yes           • Required Motion Control resources for underwork Motion Control resources for underwork Motion Control resources         1100           • Per spect-controlled axis         80           - per problowing axis         160           - per problowing axis         160           - per problowing axis         160           - per problowing axis         11           • Aumber of positioning axes at motion control cycle of 6 ms (typical value)         11           • Per problewing axis         11           • Per problewing axis         120           • Positioning axis         120           • Positioning axis         14           • Positioning axis         11           • Positioning axis         120		
• RINNSTOP LED     Yes       • ERROR LED     Yes       • Monotion of the supply voltage (PWR-LED)     Yes       • Monotion of the supply voltage (PWR-LED)     Yes       • Monotion of orland     Yes, Note: The number of technology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool       • Monotion of a valable Molion Control resources for technology objects     1.20       • Required Molion Control resources for technology objects     60       - per speci-ontrolled and the supply objects     80       - per speci-ontrolled technology objects     80       - Number of posiolining axes at molion contr		
<ul> <li>ERROR LED</li> <li>Yes</li> <li>Monitoring of the supply voltage (PWR-LED)</li> <li>Yes</li> <li>Connection display LINK TX/RX</li> <li>Yes</li> <li>Supported technology objects</li> <li>Who of control</li> <li>Wes Note: The number of technology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool</li> <li>Number of available Motion Control resources for technology objects</li> <li>Required Motion Control resources</li> <li>— per specific control resources</li> <li>— per synchronous axis</li> <li>= per specific control resources</li> <li>= per can track</li> <li>= por probe</li> <li>= Number of positioning axes at motion control cycle of a ms (typical value)</li> <li>— whome of positioning axes at motion control cycle of a ms (typical value)</li> <li>= Number of positioning axes at motion control cycle of a ms (typical value)</li> <li>= Number of positioning axes at motion control cycle of a ms (typical value)</li> <li>= Number of positioning axes at motion control cycle of a ms (typical value)</li> <li>= Number of positioning axes at motion control cycle of a ms (typical value)</li> <li>= Number of positioning axis</li> <li>= PD_Compact</li> <li>= Yes</li> <li>= PD_Compact</li> <li>= Yes</li> <li>= Portomatic for temperature</li> <li>= Ves</li> <li>= Portomatic for a solution to ratio of 20 years and regare time of 100 hours)</li> <li>= Log dam mode (PEP ang) in accordiance</li> <li>= Ves</li> <li>= Stata.cx: to EC #1500</li> <li>= Stata.cx: to EC #1500</li> <li>= Ve</li></ul>	-	Yes
• Monitoring of the supply voltage (PWR-LED)         Yes           Supported technology objects         Yes: Note: The number of technology objects affects the cycle time of technology objects affects the cycle time of technology objects           • Number of available Motion Control resources for technology objects affects the cycle time of technology objects         1120           • Required Motion Control resources         -           - per speed: controlled axis         80           - per synchronous axis         180           - per synchronous axis         180           - per synchronous axis         180           - per cam track         180           - per probe         40           - Positioning axis         180           - mome of positioning axes at motion control         11           - Where of positioning axes at motion control         14           - Controller         Yes: PID controller with integrated optimization for valves           • PID_Senp         Yes: PID controller with integrated optimization for valves           • PID_Senp         Yes: PID controller with integrated optimization for valves           • PID_Senp         Yes: PID controller with integrated optimization for valves           • PID_Senp         Yes: PID controller with integrated optimization for valves           • PID_Senp         Yes: PID controller with integrated optimizati		
Connection display LINK TX/RX     Yes      Supported technology objects     Motion Control     Motion Control     Motion Control     Number of available Motion Control resources for     the PLC program: selection guide via the TIA Selection Tool     1     Ta0     The speed-controlled axis     Requires Motion Control resources     - per speed-controlled axis     Requires Motion Control resources     - per speed-controlled axis     Requires Motion Control resources     - per output can     - per output can     - per output can     - per output can     - per probe     40     - per output can     - per probe     40     - perotall instaliation for installati	MAINT LED	Yes
Connection display LINK TX/RX     Yes      Supported technology objects     Motion Control     Motion Control     Motion Control     Number of available Motion Control resources for     the PLC program: selection guide via the TIA Selection Tool     1     Ta0     The speed-controlled axis     Requires Motion Control resources     - per speed-controlled axis     Requires Motion Control resources     - per speed-controlled axis     Requires Motion Control resources     - per output can     - per output can     - per output can     - per output can     - per probe     40     - per output can     - per probe     40     - perotall instaliation for installati	<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes
Motion Control         Yes: Note: The number of technology objects affects the cycle time of technology objects           • Number of available Motion Control resources for technology objects         1120           • Perspection Control resources         40           • - per spect-controlled axis         80           per synchronous axis         100           - per output cam         20           - per probe         40           • Positioning axis         100           per probe         40           • Positioning axis         100           per probe         40           • Positioning axis         11           worther of nositioning axes at motion control cycle of an (typical value)         11           Number of positioning axes at motion control cycle of an (typical value)         14           • PD_ Compact         Yes; PID controller with integrated optimization for valves           • PD_ Temp         Yes           Counting and measuing         *           • High-speed counter         Yes           • Stata cot LEC 61508         SLI. 3           Probability of failure (for service) life of 20 years and regarter time of 100 hours)           - Low demand mode: PFDag in accordance with SLI.3           Probability of failure (for service) life of 20 years and regarter		Yes
the PLC program: selection guide via the TIA Selection Tool technology objects Program selection guide via the TIA Selection Tool 120 Per select-controlled axis Per spect-controlled axis Per spect-con	Supported technology objects	
• Number of available Molino Control resources for technology objects     1 120       • Pequired Molino Control resources     40       - per synchronous axis     160       - per synchronous axis     160       - per output cam     20       - per output cam     11       - Number of positioning axes at motion control cycle of 4 ms (typical value)     11       - Number of positioning axes at motion control cycle of 8 ms (typical value)     14       Controller     • PID_Compact     Yes: PID controller with integrated optimization for valves       • PID_Step     Yes: PID controller with integrated optimization for valves     Yes: PID controller with integrated optimization for valves       • PID-Temp     Yes: PID controller with integrated optimization for valves     Yes: PID controller with integrated optimization for valves       • PID-Temp     Yes: PID controller with integrated optimization for valves     Yes: PID controller with integrated optimization for valves       • PID-Temp     Yes: PID controller with integrated optimization for valves     Yes: PID controller with integrated optimization for valves       • PiD_Compact     Yes: VID controller with integrated optimization for valves<	Motion Control	Yes; Note: The number of technology objects affects the cycle time of
eRequired Motion Control resources		the PLC program; selection guide via the TIA Selection Tool
• Required Motion Control resources     40       - per synchronous axis     80       - per synchronous axis     180       - per authoria     80       - Number of positioning axes at motion control cycle of 8 ms (typical value)     11       - Number of positioning axes at motion control cycle of 8 ms (typical value)     14       Controller     Yes; Universal PID controller with integrated optimization       PID_Step     Yes; PID controller with integrated optimization for valves       PID-Temp     Yes; PID controller with integrated optimization for valves       PID-Temp     Yes; VID controller with integrated optimization for temperature       Counting and measuring     Yes       • High-speed counter     Yes       Probabiity of failure (for service life of 20 ye		1 120
		40
- per output cam         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)         11           - Number of positioning axes at motion control cycle of 4 ms (typical value)         14           - Number of positioning axes at motion control cycle of 8 ms (typical value)         Yes; Universal PID controller with integrated optimization           • PID_Compact         Yes; Universal PID controller with integrated optimization for valves           • PID-Temp         Yes; PID controller with integrated optimization for temperature           Counting and measuring         *           • High-speed counter         Yes           • Performance level according to ISO 13849-1         PLe           • Election S         Sill 3           Probability of failure (for service life of 20 years and repair time of 100 hours)         -           - Low demand mode: PFDay in accordance         <2.00E-05		
— per probe     40       ● Positioning axis     11       … Number of positioning axes at motion control     11       … Number of positioning axes at motion control     14       … Number of positioning axes at motion control     14       … PID_Compact     Yes; Universal PID controller with integrated optimization       ● PID_Temp     Yes; PID controller with integrated optimization for valves       ● PID_Temp     Yes; PID controller with integrated optimization for temperature       Counting and measuring     • High-speed counter       ● PID_Temp     Yes; PID controller with integrated optimization for temperature       Counting and measuring     • Yes       Standards, approvals, certificates     Yes       Highest safety class achievable in safety mode     • Le       • Performance level according to ISO 13849-1     PLe       • Sta. co. to IEC 61508     Stl. 3       Probability of failure (for service life of 20 years and repair time of 100 hours)     - Low demand mode: PFDay in accordance       - — Low demand mode: PFDay in accordance     < 2.00E-05		
<ul> <li>Postioning axis         <ul> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> <li>Number of positioning axes at motion control cycle of 4 ms (typical value)</li> </ul> </li> <li>Number of positioning axes at motion control cycle of 8 ms (typical value)</li> <li>PID_Compact</li> <li>PID_Compact</li> <li>Yes: Universal PID controller with integrated optimization for valves</li> <li>PID_Temp</li> <li>Yes: PID controller with integrated optimization for valves</li> <li>PID_Temp</li> <li>Yes: PID controller with integrated optimization for temperature</li> <li>Ves: PID controller with integrated optimization for valves</li> <li>Ves: PID controller with integrated optimization for temperature</li> <li>Ves: PID controller with integrated optimization for valves</li> <li>Ves: PID controller with integrated optimization for temperature</li> <li>Ves: Volume (for service life of 20 years and repair time of 100 hours)</li> <li>Low demand mode: PFDavg in accordance</li> <li>Ves: Volume of this databon, main.</li> <li>Solution accordance with SIL3</li> <li>Ambient conditions</li> <li>Ambient conditions max.</li> <li>Solution accordance with SIL3</li> <li>Ambient conditions max.</li> <li>Solo C</li> <li>Ves: incl. failsation attitude above sea level, max.</li> <li>Solo m; Restrictions for installation attitudes &gt; 2 000 m; see manual configuration / bacer</li> <li>Programming language</li> <li>IAD</li> <li>Yes: incl. failsate</li> <li>Solo m; Restrictins f</li></ul>	•	
cycle of 4 ms (typical value)     14       - Number of positioning axes at motion control cycle of 8 ms (typical value)     14       Controller     *       • PID_Compact     Yes; Universal PID controller with integrated optimization       • PID_Step     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 staft values activable 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 repair time of 100 hours)        - Low demand mode: PFDarg in accordance     <2.00E-05		
- Number of positioning axes at motion control cycle of 8 ms (typical value)       14         - PID_Compact       Yes; Universal PID controller with integrated optimization         • PID_Step       Yes; PID controller with integrated optimization for valves         • PID-Temp       Yes; PID controller with integrated optimization for temperature         Countroller       Yes; PID controller with integrated optimization for temperature         Counting and measuring       Yes;         • High-speed counter       Yes         Standards, approvals, certificates       PLe         Statact to IEC 61508       SIL 3         Probability of failure (for service life of 20 years and repair time of 100 hours)       -         - Low demand mode: PFDavg in accordance with SIL3          Ambient conditions       < 1.00E-09	<ul> <li>Number of positioning axes at motion control</li> </ul>	11
cycle of 8 ms (typical value)         Controller            • PID_Compact             • PID_Step             • PID-Temp             • PID-Temp             • Pid-step             • Performance level according to ISO 13849-1             • Performance level according to ISO 13849-1             • Performance level according to ISO 13849-1             • Performance level according to ISO 13849-1            • Pidb demand/continuous mode: PFDavg in accordance             • with SiL3             • Tow demand mode: PFDavg in accordance             • with all stallation, min.             • Anbient conditions             Ambient conditions             • Morizati installation, max.             • O'C             • vertical installation, max.             • O'C No condensation		
Controller       Yes; Universal PID controller with integrated optimization         • PID_Step       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       -         • Sta acc. to IEC 61508       SL 3         Probability of failure (for service life of 20 years and repair time of 100 hours)       -         Low demand mode: PFDavg in accordance          with SL3       -         Ambient temperature during operation       < 1.00E-09		14
• PID_Compact     Yes; Universal PID controller with integrated optimization for valves       • PID_Temp     Yes; PID controller with integrated optimization for valves       • PID_temp     Yes; PID controller with integrated optimization for temperature       • Nigh-speed counter     Yes;       • Nigh-speed counter     Yes       Standards, approvals, cortificates		
• 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, cortificates       *         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 repair time of 100 hours)       -         - Low demand mode: PFDavg in accordance with SiL3          Ambient conditions          Ambient temperature during operation       < 1.00E-09		Vegi Universal DID controller with integrated entimization
• PID-Temp       Yes; PID controller with integrated optimization for temperature         Counting and measuring       Yes         Standards, approvals, cortificates       Figh-speed counter         High-speed counter       Yes         Standards, approvals, cortificates       Figh-speed counter         High-stafety class achievable in safety mode       Figh-speed counter         • Performance level according to ISO 1349-1       PLe         • SL acc. to IEC 61508       SL 3         Probability of failure (for service life of 20 years and repair time of 100 hours)       -         - Low demand mode: PFDavg in accordance with SL3       <1.00E-09		
Counting and measuring       Yes         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 repair time of 100 hours)		
High-speed counter       Yes         Standards, approvals, cortificates         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 repair time of 100 hours)		res, rib controller with integrated optimization for temperature
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 repair time of 100 hours)       -         - Low demand mode: PFDavg in accordance with SIL3       < 2.00E-05		Yes
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 repair time of 100 hours)       -         Low demand mode: PFDavg in accordance with SIL3       < 2.00E-05	0	
<ul> <li>Performance level according to ISO 13849-1</li> <li>PLe</li> <li>SIL acc. to IEC 61508</li> <li>SIL 3</li> <li>Probability of failure (for service life of 20 years and repair time of 100 hours)</li> <li> <ul> <li>Low demand mode: PFDavg in accordance with SIL3</li> <li>OBE-05</li> <li>with SIL3</li> <li>High demand/continuous mode: PFH in accordance with SIL3</li> </ul> </li> <li>Ambient conditions</li> <li>Ambient temperature during operation         <ul> <li>horizontal installation, min.</li> <li>-30 °C; No condensation</li> <li>horizontal installation, min.</li> <li>-30 °C; No condensation</li> <li>vertical installation, max.</li> <li>60 °C</li> <li>vertical installation, max.</li> <li>50 °C</li> </ul> </li> <li>Attitude during operation relating to sea level</li> <li>Installation, max.</li> <li>50 °C</li> <li>Attitude during operation relating to sea level</li> <li>Installation altitude above sea level, max.</li> <li>5 000 m; Restrictions for installation altitudes &gt; 2 000 m; see manual</li> </ul> <li>configuration / header</li> <li>Programming / header</li> <li>Programming language         <ul> <li>LAD</li> <li>Yes; incl. failsafe</li> <li>FBD</li> <li>Yes; incl. failsafe</li> <li>STL</li> <li>SGL</li> <li>GRAPH</li> <li>Yes</li> <li>GRAPH</li> <li>Yes</li> <li>GRAPH</li> <li>Yes</li> <li>GRAPH</li> <li>Yes</li> <li>Block protection</li> <li>Yes</li> </ul> </li>		
<ul> <li>SIL acc. to IEC 61508</li> <li>SIL 3</li> <li>Probability of failure (for service life of 20 years and repair time of 100 hours)         <ul> <li>Low demand mode: PFDay in accordance with SIL3</li> <li>High demand/continuous mode: PFH in accordance with SIL3</li> <li>Ambient conditions</li> </ul> </li> <li>Ambient temperature during operation         <ul> <li>horizontal installation, min.</li> <li>-30 °C; No condensation</li> <li>horizontal installation, max.</li> <li>60 °C</li> <li>vertical installation, max.</li> <li>60 °C</li> <li>vertical installation, max.</li> <li>50 °C; No condensation</li> <li>vertical installation, max.</li> <li>50 °C</li> </ul> </li> <li>Altitude during operation relating to sea level</li> <li>Installation altitude above sea level, max.</li> <li>50 °C</li> </ul> <li>Altitude during operation relating to sea level</li> <li>Installation altitude above sea level, max.</li> <li>50 00 m; Restrictions for installation altitudes &gt; 2 000 m, see manual</li> <li>configuration / programming / header</li> <li>Programming language         <ul> <li>LAD</li> <li>Yes; incl. failsafe</li> <li>SCL</li> <li>SCL</li> <li>Yes</li> <li>SCL</li> <li>Yes</li> </ul> </li> <li>Know-how protection</li> <li>Ves</li> <li>Coppy protection</li> <ul> <li>Yes</li> </ul>		PLe
Probability of failure (for service life of 20 years and repair time of 100 hours)       -	0	
with SL3     - High demand/continuous mode: PFH in accordance with SIL3       Ambient conditions       Ambient temperature during operation       • horizontal installation, min.     -30 °C; No condensation       • horizontal installation, max.     60 °C       • vertical installation, max.     60 °C       • vertical installation, max.     50 °C       • vertical installation, max.     50 °C       • Vertical installation, max.     50 °C       • vertical installation attitude above sea level     -       • Installation attitude above sea level, max.     5 000 m; Restrictions for installation attitudes > 2 000 m, see manual       configuration / header     -       Programming language     -       - LAD     Yes; incl. failsafe       - STL     Yes       - SCL     Yes       - SCL     Yes       - GRAPH     Yes       Know-how protection/password protection     Yes       • User program protection/password protection     Yes       • Block protection     Yes	Probability of failure (for service life of 20 years and repair	
High demand/continuous mode: PFH in accordance with SIL3       < 1.00E-09	- Low demand mode: PFDavg in accordance	< 2.00E-05
accordance with SIL3         Ambient conditions         Ambient temperature during operation         • horizontal installation, min.       -30 °C; No condensation         • horizontal installation, max.       60 °C         • vertical installation, max.       50 °C; No condensation         • vertical installation, max.       50 °C         • vertical installation, max.       50 °C         • vertical installation, max.       50 °C         • Installation altitude above sea level       -         • Installation altitude above sea level, max.       5 000 m; Restrictions for installation altitudes > 2 000 m, see manual         configuration / header       -         Programming language       -         - LAD       Yes; incl. failsafe         - FBD       Yes; incl. failsafe         - STL       Yes         - SCL       Yes         - GRAPH       Yes         - User program protection/password protection       Yes         • User program protection/password protection       Yes         • Block protection       Yes		
Ambient conditions         Ambient temperature during operation         • horizontal installation, min.       -30 °C; No condensation         • horizontal installation, max.       60 °C         • vertical installation, max.       50 °C         Altitude during operation relating to sea level       -30 °C; No condensation         • Installation attitude above sea level       5 000 m; Restrictions for installation attitudes > 2 000 m, see manual         configuration / header       5 000 m; Restrictions for installation attitudes > 2 000 m, see manual         configuration / programming / header       -         Programming language       -         - LAD       Yes; incl. failsafe         - FBD       Yes; incl. failsafe         - STL       Yes         - SCL       Yes         - GRAPH       Yes         Ves program protection/password protection       Yes         • User program protection/password protection       Yes         • Block protection       Yes		< 1.00E-09
Ambient temperature during operation <ul> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>60 °C</li> <li>vertical installation, min.</li> <li>-30 °C; No condensation</li> <li>vertical installation, max.</li> <li>50 °C</li> </ul> Altitude during operation relating to sea level <ul> <li>Installation altitude above sea level, max.</li> <li>5 000 m; Restrictions for installation altitudes &gt; 2 000 m, see manual</li> </ul> configuration / header             Programming language <ul> <li>LAD</li> <li>Yes; incl. failsafe</li> <li>SCL</li> <li>SCL</li> <li>Yes</li> <li>GRAPH</li> <li>Yes</li> <li>User program protection/password protection</li> <li>Yes</li> <li>Copy protection</li> <li>Yes</li> <li>Block protection</li> <li>Yes</li> </ul>		
<ul> <li>horizontal installation, min.</li> <li>-30 °C; No condensation</li> <li>horizontal installation, max.</li> <li>60 °C</li> <li>vertical installation, max.</li> <li>-30 °C; No condensation</li> <li>vertical installation, max.</li> <li>50 °C</li> <li>Altitude during operation relating to sea level</li> <li>Installation altitude above sea level, max.</li> <li>5 000 m; Restrictions for installation altitudes &gt; 2 000 m, see manual</li> <li>configuration / header</li> <li>configuration / programming / header</li> <li>Programming language</li> <li>- LAD</li> <li>Yes; incl. failsafe</li> <li>- STL</li> <li>SCL</li> <li>- SCL</li> <li>Yes</li> <li>- GRAPH</li> <li>Ves</li> <li>Know-how protection</li> <li>Ves</li> <li>Know-how protection/password protection</li> <li>Yes</li> <li>Block protection</li> <li>Yes</li> </ul>		
<ul> <li>horizontal installation, max.</li> <li>60 °C</li> <li>vertical installation, min.</li> <li>-30 °C; No condensation</li> <li>vertical installation, max.</li> <li>50 °C</li> <li>Altitude during operation relating to sea level</li> <li>Installation altitude above sea level, max.</li> <li>5 000 m; Restrictions for installation altitudes &gt; 2 000 m, see manual</li> <li>configuration / header</li> <li>configuration / programming / header</li> <li>Programming language</li> <li>LAD</li> <li>Yes; incl. failsafe</li> <li>FBD</li> <li>Yes; incl. failsafe</li> <li>SCL</li> <li>SCL</li> <li>GRAPH</li> <li>Yes</li> <li>Know-how protection</li> <li>User program protection/password protection</li> <li>Yes</li> <li>Block protection</li> <li>Yes</li> </ul>		20 °C: No condensation
<ul> <li>vertical installation, min.</li> <li>-30 °C; No condensation</li> <li>vertical installation, max.</li> <li>50 °C</li> <li>Altitude during operation relating to sea level</li> <li>Installation altitude above sea level, max.</li> <li>5 000 m; Restrictions for installation altitudes &gt; 2 000 m, see manual</li> <li>configuration / header</li> <li>configuration / programming / header</li> <li>Programming language</li> <li>— LAD</li> <li>— FBD</li> <li>— STL</li> <li>— SCL</li> <li>— GRAPH</li> <li>Yes</li> <li>Know-how protection</li> <li>User program protection/password protection</li> <li>Yes</li> <li>— Soly protection</li> <li>Yes</li> <li>— Block protection</li> <li>Yes</li> </ul>	-	
• vertical installation, max.50 °CAltitude during operation relating to sea level• Installation altitude above sea level, max.5 000 m; Restrictions for installation altitudes > 2 000 m, see manualconfiguration / headerconfiguration / programming / headerProgramming language- LADYes; incl. failsafe- FBDYes; incl. failsafe- STLYes- SCLYes- GRAPHYesVesr program protection/password protectionYes• Lopy protectionYes• Block protectionYes		
Altitude during operation relating to sea level       5 000 m; Restrictions for installation altitudes > 2 000 m, see manual         configuration / header       5 000 m; Restrictions for installation altitudes > 2 000 m, see manual         configuration / header       restrictions for installation altitudes > 2 000 m, see manual         configuration / header       Programming / header         Programming language       - LAD         - LAD       Yes; incl. failsafe         - FBD       Yes; incl. failsafe         - STL       Yes         - SCL       Yes         - GRAPH       Yes         Know-how protection       Yes         • User program protection/password protection       Yes         • Block protection       Yes		
● Installation altitude above sea level, max.       5 000 m; Restrictions for installation altitudes > 2 000 m, see manual         configuration / programming / header         Programming language         - LAD       Yes; incl. failsafe         - FBD       Yes; incl. failsafe         - STL       Yes         - SCL       Yes         - GRAPH       Yes         ● User program protection/password protection       Yes         ● Copy protection       Yes         ● Block protection       Yes		
configuration / header         Programming language		5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
configuration / programming / header         Programming language       Yes; incl. failsafe         - LAD       Yes; incl. failsafe         - FBD       Yes; incl. failsafe         - STL       Yes         - SCL       Yes         - GRAPH       Yes         Vesr program protection/password protection       Yes         • Copy protection       Yes         • Block protection       Yes		
Programming language         - LAD       Yes; incl. failsafe         - FBD       Yes; incl. failsafe         - STL       Yes         - SCL       Yes         - GRAPH       Yes         • User program protection/password protection       Yes         • Copy protection       Yes         • Block protection       Yes		
- LADYes; incl. failsafe- FBDYes; incl. failsafe- STLYes- SCLYes- GRAPHYesKnow-how protectionYes• User program protection/password protectionYes• Copy protectionYes• Block protectionYes		
FBDYes; incl. failsafe STLYes SCLYes GRAPHYesKnow-how protectionYes• User program protection/password protectionYes• Copy protectionYes• Block protectionYes		Yes: incl. failsafe
- STLYes- SCLYes- GRAPHYesKnow-how protectionYes• User program protection/password protectionYes• Copy protectionYes• Block protectionYes		
SCL GRAPHYesKnow-how protectionYesKnow-how protection/password protectionYes• User program protection/password protectionYes• Copy protectionYes• Block protectionYes		
Know-how protection       Yes         • User program protection/password protection       Yes         • Copy protection       Yes         • Block protection       Yes		
• User program protection/password protectionYes• Copy protectionYes• Block protectionYes	— GRAPH	Yes
• User program protection/password protectionYes• Copy protectionYes• Block protectionYes	Know-how protection	
Copy protection Yes     Block protection Yes		Yes
	Copy protection	Yes
Access protection		Yes
	Access protection	

<ul> <li>protection of confidential configuration data</li> </ul>	Yes
<ul> <li>Protection level: Write protection</li> </ul>	Yes
<ul> <li>Protection level: Read/write protection</li> </ul>	Yes
<ul> <li>Protection level: Write protection for Failsafe</li> </ul>	Yes
<ul> <li>Protection level: Complete protection</li> </ul>	Yes
programming / cycle time monitoring / header	
lower limit	adjustable minimum cycle time
• upper limit	adjustable maximum cycle time
Dimensions	
Width	100 mm
Height	117 mm
Depth	75 mm
Weights	
Weight, approx.	265 g
last modified:	4/2/2023 🖸
last modified:	4/2/2023 🖸