## SIEMENS

## Data sheet

## 6ES7512-1SM03-0AB0

SIMATIC DP, CPU 1512SP F-1 PN for ET 200SP, central processing unit with work memory 600 KB for program and 2 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 109816889 at support.industry.siemens.com to be observed! \*\*\*\*

General information	support.industry.siemens.com to be observed:
Product type designation	CPU 1512SP F-1 PN
HW functional status	FS01
Firmware version	V3.0
FW update possible	Yes
Product function	V 10M0 to 10M0
• I&M data	Yes; I&M0 to I&M3
Module swapping during operation (hot swapping)	Yes; Multi-hot swapping
Isochronous mode	Yes; only with PROFINET; with minimum OB 6x cycle of 500 µs
Engineering with	V40 (EVAL) (0.0) with older TIA Destal warries and investigation of CEO7
<ul> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V18 (FW V3.0); with older TIA Portal versions configurable as 6ES7 512-1SK01-0AB0
Configuration control	
	Mar.
via dataset	Yes
Control elements	
Mode selector switch	1
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Mains buffering	
Mains/voltage failure stored energy time	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
l <sup>2</sup> t	0.3 A <sup>2</sup> ·s
Power	
Infeed power to the backplane bus	8.05 W
	0.05 W
Power loss	
Power loss, typ.	6.5 W
Memory	
Number of slots for SIMATIC memory card	1
SIMATIC memory card required	Yes
Work memory	
<ul> <li>integrated (for program)</li> </ul>	600 kbyte
<ul> <li>integrated (for data)</li> </ul>	2 Mbyte
Load memory	
<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	32 Gbyte
Backup	
<ul> <li>maintenance-free</li> </ul>	Yes
CPU processing times	
for bit operations, typ.	25 ns
for word operations, typ.	32 ns
for fixed point arithmetic, typ.	42 ns
for floating point arithmetic, typ.	170 ns
CPU-blocks	

Number of elements (total) DB	4 000; Blocks (OB, FB, FC, DB) and UDTs
Number range	1 60 999; subdivided into: number range that can be used by the user: 1 59 999, and number range of DBs created via SFC 86: 60 000 60 999
• Size, max.	2 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	
Number range	0 65 535
• Size, max.	600 kbyte
FC	
Number range	0 65 535
• Size, max.	600 kbyte
OB	
• Size, max.	600 kbyte
Number of free cycle OBs	100
<ul> <li>Number of time alarm OBs</li> <li>Number of delay alarm OBs</li> </ul>	20 20
Number of cyclic interrupt OBs	20; With minimum OB 3x cycle of 250 µs
Number of process alarm OBs	50
Number of DPV1 alarm OBs	3
Number of isochronous mode OBs	1
Number of technology synchronous alarm OBs	2
Number of startup OBs	100
Number of asynchronous error OBs	4
<ul> <li>Number of synchronous error OBs</li> </ul>	2
<ul> <li>Number of diagnostic alarm OBs</li> </ul>	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     Retentivity	Any (only limited by the main memory)
— adjustable	Yes
S7 times	100
Number	2 048
Retentivity	
— adjustable	Yes
IEC timer	
Number	Any (only limited by the main memory)
Retentivity	
— 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	
<ul> <li>Size, max.</li> <li>Number of clock memories</li> </ul>	16 kbyte
Number of clock memories	8; 8 clock memory bit, grouped into one clock memory byte
Data blocks         e Retentivity adjustable	Yes
Retentivity adjustable     Retentivity preset	No
Local data	
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

per CM/CP	
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
Subprocess images	o hoyte
<ul> <li>Number of subprocess images, max.</li> </ul>	32
Address space per module	
<ul> <li>Address space per module, max.</li> </ul>	288 byte; For input and output data respectively
Address space per station	
Address space per station, max.	2 560 byte; for central inputs and outputs; depending on configuration; 2
llandarana araɗinaradina	048 bytes for ET 200SP modules + 512 bytes for ET 200AL modules
Hardware configuration	
Number of distributed IO systems	32; A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET or PROFIBUS communication modules, but also by the connection of I/O via AS-i master modules or links (e.g. IE/PB-Link)
Number of DP masters	
• Via CM	1
Number of IO Controllers	
<ul> <li>integrated</li> </ul>	1
• Via CM	0
Rack	
<ul> <li>Modules per rack, max.</li> </ul>	82; CPU + 64 modules + server module (mounting width max. 1 m) + 16 ET 200AL modules
<ul> <li>Quantity of operable ET 200SP modules, max.</li> </ul>	64
<ul> <li>Quantity of operable ET 200AL modules, max.</li> </ul>	16
<ul> <li>Number of lines, max.</li> </ul>	1
PtP CM	
Number of PtP CMs	the number of connectable PtP CMs is only limited by the number of available slots
Time of day	
Clock	
• Type	Hardware clock
Backup time	6 wk; At 40 °C ambient temperature, typically
<ul> <li>Deviation per day, max.</li> </ul>	10 s; Typ.: 2 s
Operating hours counter	
Number	16
Clock synchronization	
<ul> <li>supported</li> </ul>	Yes
• to DP, master	Yes; Via CM DP module
• to DP, slave	Yes; Via CM DP module
<ul> <li>in AS, master</li> </ul>	Yes
• in AS, slave	Yes
<ul> <li>on Ethernet via NTP</li> </ul>	Yes
Interfaces	
Number of PROFINET interfaces	1
Number of PROFIBUS interfaces	1; Via CM DP module
Optical interface	No
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	Yes; IPv4
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
<ul> <li>SIMATIC communication</li> </ul>	Yes
Open IE communication	Yes; Optionally also encrypted
Web server	Yes
Media redundancy	Yes
PROFINET IO Controller	
Services	
— PG/OP communication	Yes

	No.
— Isochronous mode	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 $\mu$ s 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 µs 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	
	Van
	LES
— PG/OP communication     — Isochronous mode	Yes
— Isochronous mode	No
<ul> <li>— Isochronous mode</li> <li>— IRT</li> </ul>	No Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> </ul>	No Yes Yes; per user program
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> </ul>	No Yes Yes; per user program Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device,</li> </ul>	No Yes Yes; per user program
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> </ul>	No Yes Yes; per user program Yes 4
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> </ul>	No Yes Yes; per user program Yes 4 Yes; per user program
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul>	No Yes Yes; per user program Yes 4
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> </ul>	No Yes Yes; per user program Yes 4 Yes; per user program
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul>	No Yes Yes; per user program Yes 4 Yes; per user program
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface	No Yes Yes; per user program Yes 4 Yes; per user program
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types	No Yes Yes; per user program Yes; per user program Yes; per user program
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> </ul>	No Yes Yes; per user program Yes 4 Yes; per user program Yes; per user program
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul>	No Yes Yes; per user program Yes 4 Yes; per user program Yes; per user program
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols	No Yes Yes; per user program Yes; per user program Yes; per user program Yes; Via CM DP module 1
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> </ul>	No Yes Yes; per user program Yes; per user program Yes; per user program Yes; Via CM DP module 1
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> </ul>	No Yes Yes; per user program Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master	No Yes Yes; per user program Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master <ul> <li>Number of connections, max.</li> </ul>	No Yes Yes; per user program Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master	No Yes Yes; per user program Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master <ul> <li>Number of connections, max.</li> </ul>	No Yes Yes; per user program Yes 4 Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master <ul> <li>Number of connections, max.</li> <li>Number of DP slaves, max.</li> </ul>	No Yes Yes; per user program Yes 4 Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master <ul> <li>Number of connections, max.</li> <li>Number of DP slaves, max.</li> </ul> Services <ul> <li>PG/OP communication</li> </ul>	No Yes Yes; per user program Yes 4 Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes Yes Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master <ul> <li>Number of DP slaves, max.</li> </ul> Services <ul> <li>PG/OP communication</li> <li>Equidistance</li> </ul>	No Yes Yes; per user program Yes 4 Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master <ul> <li>Number of DP slaves, max.</li> </ul> Services <ul> <li>PG/OP communication</li> <li>Equidistance</li> <li>Isochronous mode</li> </ul>	No Yes Yes; per user program Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes; Via CM DP module 1 Yes Yes Yes Yes Yes Yes Yes Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFIenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master <ul> <li>Number of connections, max.</li> <li>Number of DP slaves, max.</li> </ul> Services <ul> <li>PG/OP communication</li> <li>Equidistance</li> <li>Isochronous mode</li> <li>Activation/deactivation of DP slaves</li> </ul>	No Yes Yes; per user program Yes 4 Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master <ul> <li>Number of connections, max.</li> <li>Number of DP slaves, max.</li> </ul> Services <ul> <li>PG/OP communication</li> <li>Equidistance</li> <li>Isochronous mode</li> <li>Activation/deactivation of DP slaves</li> </ul>	No Yes Yes; per user program Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes; Via CM DP module 1 Yes Yes Yes Yes Yes Yes Yes Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master <ul> <li>Number of connections, max.</li> <li>Number of DP slaves, max.</li> </ul> Services <ul> <li>PG/OP communication</li> <li>Equidistance</li> <li>Isochronous mode</li> <li>Activation/deactivation of DP slaves</li> </ul> Interface types <ul> <li>RJ 45 (Ethernet)</li> </ul>	No Yes; per user program Yes; per user program Yes; per user program Yes; via CM DP module 1 Yes Yes Yes Yes Yes Yes Yes Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master <ul> <li>Number of connections, max.</li> <li>Number of DP slaves, max.</li> </ul> Services <ul> <li>PG/OP communication</li> <li>Equidistance</li> <li>Isochronous mode</li> <li>Activation/deactivation of DP slaves</li> </ul> Interface types RJ 45 (Ethernet) <ul> <li>100 Mbps</li> </ul>	No Yes Yes; per user program Yes; per user program Yes; per user program Yes; per user program Yes; Via CM DP module 1 Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
<ul> <li>Isochronous mode</li> <li>IRT</li> <li>PROFlenergy</li> <li>Shared device</li> <li>Number of IO Controllers with shared device, max.</li> <li>activation/deactivation of I-devices</li> <li>Asset management record</li> </ul> 2. Interface Interface types <ul> <li>RS 485</li> <li>Number of ports</li> </ul> Protocols <ul> <li>PROFIBUS DP master</li> <li>PROFIBUS DP slave</li> <li>SIMATIC communication</li> </ul> PROFIBUS DP master <ul> <li>Number of connections, max.</li> <li>Number of DP slaves, max.</li> </ul> Services <ul> <li>PG/OP communication</li> <li>Equidistance</li> <li>Isochronous mode</li> <li>Activation/deactivation of DP slaves</li> </ul> Interface types <ul> <li>RJ 45 (Ethernet)</li> </ul>	No Yes; per user program Yes; per user program Yes; per user program Yes; via CM DP module 1 Yes Yes Yes Yes Yes Yes Yes Yes Yes

Autocrossing	Yes
Industrial Ethernet status LED	Yes
RS 485	
Transmission rate, max.	12 Mbit/s
Protocols	
PROFIsafe	Yes; V2.4 / V2.6
Number of connections	120: via integrated interfaces of the CDL and connected CDs / CMs
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 32
Number of connections per CP/CM	16
Number of S7 routing paths     Redundancy mode	10
H-Sync forwarding	Yes
Media redundancy	
— 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
<ul> <li>S7 communication, as client</li> </ul>	Yes
<ul> <li>User data per job, max.</li> </ul>	See online help (S7 communication, user data size)
Open IE communication	
• TCP/IP	Yes
— Data length, max.	64 kbyte
<ul> <li>— several passive connections per port,</li> </ul>	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	Vaci Standard and user passa
• HTTP	Yes; Standard and user pages
• HTTPS	Yes; Standard and user pages
OPC UA     Exercise required	Ves: "Small" license required
OPC UA Client	Yes; "Small" license required Yes; Data Access (registered Read/Write), Method Call
A Client     A client     Application authentication	Yes
Application authentication     Security policies	Available security policies: None, Basic128Rsa15, Basic256Rsa15,
User authentication	Basic256Sha256
<ul> <li>— Oser autnentication</li> <li>— Number of connections, max.</li> </ul>	"anonymous" or by user name & password 4
<ul> <li>Number of connections, max.</li> <li>Number of nodes of the client interfaces,</li> </ul>	4 1 000
recommended max.	1000
— Number of elements for one call of	300
OPC_UA_NodeGetHandleList/OPC_UA_ReadList/C max.	
<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</li> </ul>	1
instructions for session management, per connection, max.	
— Number of simultaneous calls of the client	5
instructions for data access, per connection, max.	
— Number of registerable nodes, max.	5 000
- Number of registerable method calls of	100
OPC_UA_MethodCall, max.	
<ul> <li>— Number of inputs/outputs when calling OPC_UA_MethodCall, max.</li> </ul>	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
— Security policies	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
<ul> <li>— Number of server methods, max.</li> </ul>	20
<ul> <li>— Number of inputs/outputs per server method,</li> </ul>	20
max.	
<ul> <li>— Number of monitored items, recommended max.</li> </ul>	4 000; for 1 s sampling interval and 1 s send interval
— Number of server interfaces, max.	10 of each "Server interfaces" / "Companion specification" type and 20
	of the type "Reference namespace"
<ul> <li>Number of nodes for user-defined server</li> </ul>	15 000
interfaces, max.	
<ul> <li>Alarms and Conditions</li> </ul>	Yes
<ul> <li>— Number of program alarms</li> </ul>	100
<ul> <li>— Number of alarms for system diagnostics</li> </ul>	50
Further protocols	
	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
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         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"
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         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	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
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
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
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 commissioning 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 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 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 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 2 500 600 100 160 Yes; Parallel online access possible for up to 5 engineering systems Yes; Up to 8 simultaneously (in total across all ES clients) No 8
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	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
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	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         • 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 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 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 2 500 600 100 160 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 2 500 600 100 160 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 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         • Forcing         • Forcing         • 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 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 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.         Prorcing         • Forcing         • Forcing, variables         • Number of variables, max.         Diagnostic buffer         • present	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 Yes; without fail-safe peripheral inputs/outputs (without fail-safe) 200 Yes
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.         Beroring         • Forcing         • Forcing         • Forcing 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

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: Dontroller 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 Addition Control resources for underwork Motion Control resources         11           • Perpetitioning axis         80           - per probleming axis         80           - per probleming axis         160           - per probleming axis         100           - per probleming axis         11           - Number of positioning axes at motion control cycle of 6 ms (typical value)         11           - Number of positioning axes at motion control cycle of 6 ms (typical value)         14           • PID_SStep         Yes; Universal PID controller with integrated optimization tor values           • PID_Step         Yes; Doctroller with integrated optimization for values           • PID_Step         Yes; Doctroller with integrated optimization for values           • PID_Step         Yes;           • Pidid seas co		
• 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 car: to EC at 5tata</li> <li>= Stata car: to EC at 5tata</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 m; Restrictions for installation attitudes &gt; 2 000 m; see manual</li> <li>Configuration / bader</li> <li>Ves: incl. failsafe</li> <li>- FBD</li> <li>- CAL</li> <li>- SCL</li> <li>- SCL</li> <li>Ves</li> <li>- Copy protection</li> <li>Ves</li> <li>- Co</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:	9/22/2022 🖸