## SIEMENS

## Data sheet

## 6ES7317-7TK10-0AB0



SIMATIC S7-300, CPU 317T-3 PN/DP, Central processing unit for PLC and technology tasks, 1024 KB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface DP (drive), 3rd interface Ethernet PROFINET with 2-port switch, Integr. I/O for technology, Front connector (1x 40-pole) and Micro Memory Card min. 8 MB required

General information	
HW functional status	01
Firmware version	CPU: V3.2; integrated technology V4.1.5
Product function	
Isochronous mode	Yes; Via PROFIBUS DP or PROFINET interface
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	2 A min.
Load voltage L+	
<ul> <li>Rated value (DC)</li> </ul>	24 V
<ul> <li>Reverse polarity protection</li> </ul>	Yes
Digital outputs	
— Rated value (DC)	24 V; 2L+
<ul> <li>Reverse polarity protection</li> </ul>	No; 2L+
Input current	
Current consumption (rated value)	1 050 mA
Current consumption (in no-load operation), typ.	230 mA
Inrush current, typ.	6.5 A
l²t	1 A <sup>2.</sup> s
Power loss	
Power loss, typ.	7.5 W
Memory	
Work memory	
<ul> <li>integrated</li> </ul>	1 024 kbyte
expandable	No
Load memory	
• Plug-in (MMC)	Yes
<ul> <li>Plug-in (MMC), max.</li> </ul>	8 Mbyte
<ul> <li>Data management on MMC (after last programming), min.</li> </ul>	10 у
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
<ul> <li>without battery</li> </ul>	Yes; Program and data

CPU processing times	
for bit operations, typ.	0.025 µs
for word operations, typ.	0.03 µs
for fixed point arithmetic, typ.	0.04 µs
for floating point arithmetic, typ.	0.16 µs
CPU-blocks	
Number of blocks (total)	2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can
	be reduced by the MMC used.
DB	
Number, max.	2 048; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
• Number, max.	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
• Number, max.	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
• Number, max.	see instruction list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
Number of time alarm OBs	1; OB 10
Number of delay alarm OBs	2; OB 20, 21 4: OB 32, 33, 34, 35
Number of cyclic interrupt OBs     Number of process alarm OBs	4; OB 32, 33, 34, 35 1; OB 40
<ul> <li>Number of process alarm OBs</li> <li>Number of DPV1 alarm OBs</li> </ul>	
Number of DPV Talarm OBS     Number of isochronous mode OBs	3; OB 55, 56, 57 1; OB 61 - isochronous mode is possible either on DP or PROFINET IO
	(not simultaneously)
<ul> <li>Number of technology synchronous alarm OBs</li> </ul>	1; OB 65
Number of startup OBs	1; OB 100
Number of asynchronous error OBs	6; OB 80, 82, 83, 85, 86, 87 (OB83 only for PROFINET IO)
<ul> <li>Number of synchronous error OBs</li> </ul>	2; OB 121, 122
Nesting depth	
<ul> <li>per priority class</li> </ul>	16
<ul> <li>additional within an error OB</li> </ul>	4
Counters, timers and their retentivity	
S7 counter	
Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	511
— preset	Z 0 to Z 7
Counting range	N/
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	Ver
• present	Yes SFB
• Type • Number	
• Number S7 times	Unlimited (limited only by RAM capacity)
Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	511
— preset	No retentivity
Time range	
— lower limit	10 ms

— upper limit	9 990 s
IEC timer	
• present	Yes
•	SFB
• Type • Number	
	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	256 kbyte
Flag	
• Size, max.	4 096 byte
Retentivity available	Yes; From MB 0 to MB 4 095
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	
<ul> <li>Retentivity adjustable</li> </ul>	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
<ul> <li>per priority class, max.</li> </ul>	32 768 byte; Max. 2048 bytes per block
Address area	
I/O address area	
Inputs	8 192 byte
Outputs	8 192 byte
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	
Inputs	8 192 byte
Outputs	8 192 byte
<ul> <li>Inputs, adjustable</li> </ul>	8 192 byte
<ul> <li>Outputs, adjustable</li> </ul>	8 192 byte
Inputs, default	256 byte
Outputs, default	256 byte
Default addresses of the integrated channels	
— Digital inputs	66
— Digital outputs	66
Subprocess images	
<ul> <li>Number of subprocess images, max.</li> </ul>	1; With PROFINET IO, the length of the user data is limited to 1600
	bytes
Digital channels	
Inputs	65 536
— of which central	256
Outputs	65 536
— of which central	256
Analog channels	
Inputs	4 096
— of which central	64
Outputs	4 096
— of which central	64
Hardware configuration	
Number of expansion units, max.	0
Number of DP masters	
• integrated	2; 1 DP and 1 DP (drive)
• via CP	2; for DP
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	8
Rack	
Racks, max.	1
Modules per rack, max.	8
Time of day	

Clock	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
Backup time	6 wk; At 40 °C ambient temperature
<ul> <li>Deviation per day, max.</li> </ul>	10 s; Typ.: 2 s
Behavior of the clock following POWER-ON	Clock continues running after POWER OFF
Behavior of the clock following POWER-ON	the clock continues at the time of day it had when power was switched
period	off
Operating hours counter	
• Number	4
Number/Number range	0 to 3
<ul> <li>Range of values</li> </ul>	0 to 2^31 hours (when using SFC 101)
Granularity	1 h
retentive	Yes; Must be restarted at each restart
Clock synchronization	
supported	Yes
• to MPI, master	Yes
● to MPI, slave	Yes
• to DP, master	Yes
• to DP, slave	Yes; Only time-of-day slave
• in AS, master	Yes
• in AS, slave	Yes
• on Ethernet via NTP	Yes; As client
Digital inputs	
Number of digital inputs	4
<ul> <li>of which inputs usable for technological functions</li> </ul>	4
Input characteristic curve in accordance with IEC 61131,	Yes
type 1	
Number of simultaneously controllable inputs	
horizontal installation	
— up to 40 °C, max.	4
— up to 60 °C, max.	4
vertical installation	
— up to 40 °C, max.	4
Input voltage	
<ul> <li>Rated value (DC)</li> </ul>	24 V
● for signal "0"	-3 to +5V
• for signal "1"	+15 to +30 V
Input current	
● for signal "1", typ.	7 mA
Input delay (for rated value of input voltage)	
for technological functions	
— at "0" to "1", max.	10 µs; Typical
— at "1" to "0", max.	10 µs; Typical
Cable length	4 000
• shielded, max.	1 000 m
Digital outputs	
Number of digital outputs	8
<ul> <li>of which high-speed outputs</li> </ul>	8
Functions	for technology functions, e.g. high-speed cam switch signals
Short-circuit protection	Yes
Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	48 V
Controlling a digital input	No
Switching capacity of the outputs	
on lamp load, max.	5 W
Load resistance range	
lower limit	48 Ω
• upper limit	4 kΩ
Output voltage	

● for signal "0", max.	3 V; (2L+)
<ul> <li>for signal "1", min.</li> </ul>	Rated voltage -2.5 V
Output current	Naled Vollage -2.5 V
for signal "1" rated value	0.5 A
<ul> <li>for signal "1" permissible range for 0 to 60 °C, min.</li> </ul>	5 mA
<ul> <li>for signal "1" permissible range for 0 to 60 °C, max.</li> </ul>	0.6 A
<ul> <li>for signal "0" residual current, max.</li> </ul>	0.3 mA
Parallel switching of two outputs	0.5 IIIA
for uprating	No
<ul> <li>for redundant control of a load</li> </ul>	No
Switching frequency	NO
with resistive load, max.	100 Hz
with inductive load, max.	
<ul> <li>on lamp load, max.</li> </ul>	0.2 Hz; According to IEC 60947-5-1, DC-13 100 Hz
	100 HZ
Total current of the outputs (per group) horizontal installation	
	4 A
— up to 40 °C, max.	
— up to 60 °C, max.	3 A
all other mounting positions	4.4
— up to 40 °C, max.	4 A
Integrated high-speed cams	70
Switching accuracy (+/-)	70 µs
Cable length	
<ul> <li>shielded, max.</li> </ul>	1 000 m
Analog inputs	
Number of analog inputs	0
Analog outputs	
Number of analog outputs	0
Encoder	
Connectable encoders	
• 2-wire sensor	No
Interfaces	
Number of industrial Ethernet interfaces	1
Number of PROFINET interfaces	1
Number of RS 485 interfaces	2
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
leolated	
Isolated	Yes
Interface types	Yes
Interface types • RS 485	Yes
Interface types • RS 485 • Output current of the interface, max.	Yes
Interface types • RS 485 • Output current of the interface, max. Protocols	Yes Yes 200 mA
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI	Yes Yes 200 mA Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master	Yes Yes 200 mA Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave	Yes Yes 200 mA Yes Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection	Yes Yes 200 mA Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI	Yes Yes 200 mA Yes Yes Yes No
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max.	Yes Yes 200 mA Yes Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services	Yes Yes 200 mA Yes Yes Yes No 12 Mbit/s
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication	Yes Yes 200 mA Yes Yes Yes No 12 Mbit/s
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication — Routing	Yes Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication	Yes Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication	Yes Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication	Yes Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client	Yes Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication, as client — S7 communication, as server	Yes Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes
Interface types • RS 485 • Output current of the interface, max. Protocols • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection MPI • Transmission rate, max. Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client	Yes Yes 200 mA Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes No; but via CP and loadable FB

<ul> <li>Number of DP slaves, max.</li> </ul>	124
Services	
— PG/OP communication	Yes
- Routing	Yes
— Global data communication	No
- S7 basic communication	Yes; I blocks only
— S7 communication	Yes
- S7 communication, as client	No
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	Yes; OB 61; isochronous mode can only be used alternatively on
	PROFIBUS DP or PROFINET IO
— SYNC/FREEZE	Yes
<ul> <li>Activation/deactivation of DP slaves</li> </ul>	Yes
— Number of DP slaves that can be	8
simultaneously activated/deactivated, max.	
— Direct data exchange (slave-to-slave	Yes; as subscriber
communication)	
— DPV1	Yes
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
Transmission rate, max.	12 Mbit/s
<ul> <li>automatic baud rate search</li> </ul>	Yes; only with passive interface
<ul> <li>Address area, max.</li> </ul>	32
<ul> <li>User data per address area, max.</li> </ul>	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
— Global data communication	No
— S7 basic communication	No
- S7 communication	Yes
- S7 communication, as client	No
- S7 communication, as server	Yes; Connection configured on one side only
— Direct data exchange (slave-to-slave	Yes
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
<ul> <li>Output current of the interface, max.</li> </ul>	200 mA
Protocols	
MPI	No
PROFIBUS DP master	Yes; DP(DRIVE)-Master
PROFIBUS DF Inaster     PROFIBUS DF slave	No
Point-to-point connection	No
ProfileUS DP master	
	12 Mbit/c
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	64
Services	No
— PG/OP communication	No
— Routing	No

— Global data communication	No
— S7 basic communication	No
— S7 communication	No
— Equidistance	Yes
<ul> <li>— Isochronous mode</li> </ul>	Yes
- SYNC/FREEZE	No
<ul> <li>Activation/deactivation of DP slaves</li> </ul>	Yes
— DPV1	No
Address area	
— Inputs, max.	1 024 byte
— Outputs, max.	1 024 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
GSD file	http://support.automation.siemens.com in Product Support area
<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
3. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes; 10/100 Mbit/s
	Yes
Autonegotiation	
Autocrossing	Yes
Change of IP address at runtime, supported	Yes
Interface types	
• RJ 45 (Ethernet)	Yes
Number of ports	2
integrated switch	Yes
Protocols	
• MPI	No
PROFINET IO Controller	Yes; Also simultaneously with IO-Device functionality
PROFINET IO Device	Yes; Also simultaneously with IO Controller functionality
<ul> <li>PROFIBUS DP master</li> </ul>	No
<ul> <li>PROFIBUS DP slave</li> </ul>	No
<ul> <li>Open IE communication</li> </ul>	Yes; Via TCP/IP, ISO on TCP, and UDP
Web server	Yes
Media redundancy	Yes
PROFINET IO Controller	
<ul> <li>Transmission rate, max.</li> </ul>	100 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
— S7 communication	Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32
— Isochronous mode	Yes; OB 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO
— Shared device	Yes
— Prioritized startup	Yes
— Number of IO devices with prioritized startup,	32
max.	
<ul> <li>— Number of connectable IO Devices, max.</li> </ul>	128
— Of which IO devices with IRT, max.	64
— of which in line, max.	64
- Number of connectable IO Devices for RT,	128
max.	
— of which in line, max.	128
<ul> <li>Activation/deactivation of IO Devices</li> </ul>	Yes
<ul> <li>— Number of IO Devices that can be simultaneously activated/deactivated, max.</li> </ul>	8
— IO Devices changing during operation (partner	Yes
ports), supported	

<ul> <li>— Number of IO Devices per tool, max.</li> </ul>	8
<ul> <li>Device replacement without swap medium</li> </ul>	Yes
— Send cycles	250 μs, 500 μs, 1 ms, 2 ms, 4 ms
— Updating time	250 µs to 512 ms (depending on the operating mode, see Manual "S7-
	300 CPU 31xC and CPU 31x, technical Data" for more details)
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
— User data consistency, max.	1 024 byte
PROFINET IO Device	
Services	
— PG/OP communication	Yes
— Routing	Yes
— S7 communication	Yes; with loadable FBs, max. configurable connections: 16, max. number of instances: 32
— Isochronous mode	No
— IRT	Yes
- PROFlenergy	Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard FB for I-Device
— Shared device	Yes
— Number of IO Controllers with shared device,	2
max.	
Transfer memory	
— Inputs, max.	1 440 byte; Per IO Controller with shared device
— Outputs, max.	1 440 byte; Per IO Controller with shared device
Submodules	
— Number, max.	64
— User data per submodule, max.	1 024 byte
Open IE communication	
<ul> <li>Number of connections, max.</li> </ul>	16
<ul> <li>Local port numbers used at the system end</li> </ul>	0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964,
· · ·	65532, 65533, 65534, 65535
	03332, 03333, 03334, 03333
<ul> <li>Keep-alive function, supported</li> </ul>	Yes
Keep-alive function, supported Protocols	
Protocols	Yes
Protocols PROFIsafe	Yes
Protocols PROFIsafe Redundancy mode	Yes
Protocols PROFIsafe Redundancy mode Media redundancy	Yes
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ.	Yes No 200 ms; PROFINET MRP
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max.	Yes No 200 ms; PROFINET MRP
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication	Yes No 200 ms; PROFINET MRP 50
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs
Protocols PROFIsafe Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max.	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connections per port,	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connections per port, supported	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connections per port, supported         • ISO-on-TCP (RFC1006)	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connections per port, supported         • ISO-on-TCP (RFC1006)         — Number of connections, max.	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs 16
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connections per port, supported         • ISO-on-TCP (RFC1006)         — Number of connections, max.         — Data length, max.         • UDP	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes via integrated PROFINET interface and loadable FBs 16 32 768 byte
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connections per port, supported         • ISO-on-TCP (RFC1006)         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connections per port, supported         • ISO-on-TCP (RFC1006)         — Number of connections, max.         — Data length, max.         • UDP	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connection type 11H, max.         — several passive connections per port, supported         • ISO-on-TCP (RFC1006)         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connections per port, supported         • ISO-on-TCP (RFC1006)         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16 1472 byte
Protocols         PROFIsafe         Redundancy mode         Media redundancy         - Switchover time on line break, typ.         - Number of stations in the ring, max.         Open IE communication         • TCP/IP         - Number of connections, max.         - Data length for connection type 01H, max.         - Data length for connections per port, supported         • ISO-on-TCP (RFC1006)         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16 1 472 byte
Protocols         PROFIsafe         Redundancy mode         Media redundancy         - Switchover time on line break, typ.         - Number of stations in the ring, max.         Open IE communication         • TCP/IP         - Number of connections, max.         - Data length for connection type 01H, max.         - Data length for connections per port, supported         • ISO-on-TCP (RFC1006)         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.         • UDP         • Number of HTTP clients	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16 1 472 byte Yes
Protocols         PROFIsafe         Redundancy mode         Media redundancy         - Switchover time on line break, typ.         - Number of stations in the ring, max.         Open IE communication         • TCP/IP         - Number of connections, max.         - Data length for connection type 01H, max.         - Data length for connections per port, supported         • ISO-on-TCP (RFC1006)         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length, max.         • UDP         - Number of connections, max.         - Data length max.         • UDP         - Number of HTTP clients         communication functions / header	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16 1 472 byte Yes Yes 5
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connections per port, supported         • ISO-on-TCP (RFC1006)         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of HTTP clients         Communication functions / header         PG/OP communication	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16 1 472 byte Yes Yes Yes
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connection type 11H, max.         — Data length for connections per port, supported         • ISO-on-TCP (RFC1006)         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of HTTP clients         communication functions / header         PG/OP communication         Data record routing	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16 1 472 byte Yes Yes 5
Protocols         PROFIsafe         Redundancy mode         Media redundancy         — Switchover time on line break, typ.         — Number of stations in the ring, max.         Open IE communication         • TCP/IP         — Number of connections, max.         — Data length for connection type 01H, max.         — Data length for connections per port, supported         • ISO-on-TCP (RFC1006)         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of connections, max.         — Data length, max.         • UDP         — Number of HTTP clients         Communication functions / header         PG/OP communication	Yes No 200 ms; PROFINET MRP 50 Yes; via integrated PROFINET interface and loadable FBs 16 1 460 byte 32 768 byte Yes Yes; via integrated PROFINET interface and loadable FBs 16 32 768 byte Yes; via integrated PROFINET interface and loadable FBs 16 1 472 byte Yes Yes Yes

Number of GD loops, max.	8
Number of GD packets, max.	8
<ul> <li>Number of GD packets, transmitter, max.</li> </ul>	8
<ul> <li>Number of GD packets, receiver, max.</li> </ul>	8
<ul> <li>Size of GD packets, max.</li> </ul>	22 byte
<ul> <li>Size of GD packet (of which consistent), max.</li> </ul>	22 byte
S7 basic communication	
supported	Yes
<ul> <li>User data per job, max.</li> </ul>	76 byte
<ul> <li>User data per job (of which consistent), max.</li> </ul>	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or
	X_GET as server)
S7 communication	N .
supported	Yes
• as server	Yes
• as client	Yes; via integrated PROFINET interface and loadable FB or via CP and loadable FB
• User data per job, max.	See online help of STEP 7 (shared parameters of the SFBs/FBs and of
• Oser data per job, max.	the SFCs/FCs of S7 Communication)
S5 compatible communication	
supported	Yes; via CP and loadable FC
Number of connections	
overall	32
<ul> <li>usable for PG communication</li> </ul>	31
<ul> <li>reserved for PG communication</li> </ul>	1
— adjustable for PG communication, min.	1
— adjustable for PG communication, max.	31
usable for OP communication	31
— reserved for OP communication	1
- adjustable for OP communication, min.	1
— adjustable for OP communication, max.	31
usable for S7 basic communication	30
<ul> <li>— reserved for S7 basic communication</li> </ul>	0
— adjustable for S7 basic communication, min.	0
— adjustable for S7 basic communication, max.	30
usable for S7 communication	16
<ul> <li>usable for S7 communication</li> <li>reserved for S7 communication</li> </ul>	0
<ul> <li>adjustable for S7 communication, min.</li> </ul>	0
-	16
— adjustable for S7 communication, max.	32
total number of instances, max.	
usable for routing	X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as PROFINET: 24 max.
S7 message functions	
Number of login stations for message functions, max.	32; Depending on the configured connections for PG/OP and S7 basic
	communication
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	300
Test commissioning functions	
Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4; without continuation
Status/control	
<ul> <li>Status/control variable</li> </ul>	Yes
Variables	Inputs, outputs, memory bits, DB, times, counters
<ul> <li>Number of variables, max.</li> </ul>	30
— of which status variables, max.	30
- of which control variables, max.	14
Forcing	
Forcing	Yes
<ul> <li>Forcing, variables</li> </ul>	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	

• Number of entries, max.     500		2/
	• present	Yes
• Number of entires readable in RUN, max.     499       - adjustable     10       Service data     10       • can be read out     Yes       Interrupt-fidiagnostics/status information     No       Diagnostics findication IED     No       • Status indicator digital input (green)     Yes       • Status indicator digital input (green)     Yes       • Status indicator digital input (green)     Yes       • Detential separation digital inputs     Yes       • Detential separation digital outputs     Yes       • Detential separation digital outputs     Yes       • Detential separation digital outputs     Yes       • between the channels and backplane bus     Yes       * configuration offwalor	-	
—preset         10           Service data         ·           - can be read out         Yes           Interrupts/diagnostics/status information         No           Diagnostics function         No           Diagnostics function         No           Status indicator digital input (green)         Yes           • Status indicator digital output (green)         Yes           Potential separation         Yes           Potential separation digital outputs         ·           • between the channels and backplane bus         Yes           Potential separation digital outputs         ·           • between the channels and backplane bus         Yes           Isolation         Solation tested with           Solation tested with         500 V DC           Ambient conditions         ·           Ambient conditions         ·           Configuration / header         Configuration istead           Configuration / programming / header         ·           Configuration software         ·           · Command set         8           · Nesting levels         8           · Nesting levels         8           · System functiono (SFC)         see instruction list           · System function		
Service data     Yes       • can be read out     Yes       Interrupt site/apostice/status information     No       Diagnostice function     No       Diagnostics indicator digital input (green)     Yes       • Status indicator digital output green)     Yes       Potential separation digital inputs     Yes       • between the channels and backplane bus     Yes       Potential separation digital outputs     Yes       • between the channels and backplane bus     Yes       Isolation tested with     500 V DC       Ambient conditions     600 °C       Ambient conditions     0 °C       • min.     0 °C       • officeration software     Ves: STEP 7 V5.5 SP2 or higher and S7-Technology option package       • STEP 7     Ves: STEP 7 V5.5 SP2 or higher and S7-Technology option package       • STEP 7     Ves: STEP 7 V5.5 SP2 or higher and S7-Technology option package       • STEP 7     Ves: STEP 7 V5.5 SP2 or higher and S7-Technology option package       • STEP 7     Ves: STEP 7 V5.5 SP2 or higher and S7-Technology option package       • STEP 7     Ves: STEP 7 V5.5 SP2 or higher and S7-Technology option package       • STEP 7     Ves: STEP 7 V5.5 SP2 or higher and S7-Technology option package       • STEP 7     Ves: STEP 7 V5.5 SP2 or higher and S7-Technology option package       • STEP 7     Ves: STEP 7 V5.5 SP2 or higher and S7-Te	— adjustable	Yes; From 10 to 499
• can be read out     Yes       Interruptic/diagnostic/risturs information     No       Diagnostics function     No       Diagnostics function     No       Diagnostics function     No       Status indicator digital input (green)     Yes       • Status indicator digital output (green)     Yes       Potential separation digital output (green)     Yes       • between the channels and backplane bus     Yes       • solation     500 V DC       Ambient temperature during operation     •       • min.     0 °C       • min.     0 °C       • oommand set     see instruction list       • Setting levels     8       • System function lokes (SFB)     see instruction list       • System function lokes (SFB)     see instruction list       <	— preset	10
Interrupts/diagnostics/status information           Alarms         No           Diagnostics function         No           Diagnostics function         No           Status indication LED         *           • Status indicator digital input (green)         Yes           Potential separation digital inputs         *           • between the channels and backplane bus         Yes           Potential separation digital outputs         *           • between the channels and backplane bus         Yes           Isolation         *           • between the channels and backplane bus         Yes           Isolation tested with         500 V DC           Ambient conditions         *           Ambient conditions         *           • min.         0 °C           • max.         60 °C           configuration / header         *           Configuration / header         *           Configuration / programming / header         *           • Command set         % ese instruction list           • Nesting levels         8           • System function blocks (SFE)         #           • System function blocks (SFE)         *           • System function blocks (SFE)         *	Service data	
Alarms     No       Diagnostics indication LED     No       • Status indicator digital input (green)     Yes       • Status indicator digital inputs     Yes       Potential separation     Yes       Potential separation digital inputs     Yes       • between the channels and backplane bus     Yes       Potential separation digital outputs     Yes       • between the channels and backplane bus     Yes       Isolation tosted with     500 V DC       Ambient temperature during operation     •       • min.     0 °C       • offiguration software     •       • Configuration software     • Command set       • Steps     See instruction list       • System functions (SFC)     see instruction list       • System function blocks (SFB)     see instruction list       Programming inguage     Yes       - LAD     Yes       - SCL     Yes       - GRAPH     Yes       - GRAPH     Yes       - GRAPH     Yes       - Block encryption     Yes       - GRAPH     Yes       - GRAPH     Yes       - GRAPH     Yes       - Block encryption     Yes       - Block encryption     Yes       - Midfi     120 mm       - Bloc	• can be read out	Yes
Diagnostics function         No           Diagnostics indicator digital input (green)         Yes           • Status indicator digital output (green)         Yes           Potential separation         Potential separation digital inputs           • between the channels and backplane bus         Yes           Potential separation digital outputs         • between the channels and backplane bus         Yes           Potential separation digital outputs         • between the channels and backplane bus         Yes           Isolation         0 VDC         Ambient conditions           Ambient conditions         0 °C         Configuration / heador           Configuration / heador         0 °C         Configuration / heador           Configuration / programming / header         • Command set         see instruction list           • System function blocks (SFB)         see instruction list         8           • System function blocks (SFB)         see instruction list         See           Programming language         — LAD         Yes           — SCL         Yes         See           — SQL         Yes         See           — SQL         Yes         See           — CPC         Yes         See           — GRAPH         Yes         Ses <td>Interrupts/diagnostics/status information</td> <td></td>	Interrupts/diagnostics/status information	
Diagnostics indication LED       Yes             Status indicator digital input (green) Status indicator digital inputs        Yes            Potential separation           Potential separation digital inputs             • between the channels and backplane bus        Yes             Potential separation digital outputs           Yes             • between the channels and backplane bus        Yes             Potential separation digital outputs               • between the channels and backplane bus        Yes             Potential separation digital outputs               • between the channels           See             Isolation           Solation             Isolation tested with           500 V DC             Ambient temperature during operation           o 'C             e min.           0 'C             e min.           0 'C             configuration / programming / header             Command set           See instruction list             System functions (SFC)             System functions (SFC)	Alarms	No
• Status indicator digital input (green)     Yes       • Status indicator digital inputs     Yes       Potential separation digital inputs     Yes       • between the channels and backplane bus     Yes       Potential separation digital inputs     Yes       • between the channels and backplane bus     Yes       Isolation     Status indicator digital inputs       Isolation tested with     500 V DC       Ambient conditions     0 °C       Anbient conditions     60 °C       Configuration / header     Configuration isoftware       • STEP 7     Yes: STEP 7 V5.5 SP2 or higher and S7-Technology option package       v4.2 SP3     Configuration / programming / header       • Command set     Se instruction list       • Nesting levels     8       • System functions (SFC)     see instruction list       • System function block (SFB)     see instruction list       • Programming language     Yes       - LAD     Yes       - SCL     Yes       - SCL     Yes       - CFC     Yes       - GRAPH     Yes       - Block encryption     Yes       Kno	Diagnostics function	No
• Status indicator digital output (green)       Yes         Potential separation digital inputs       •         • between the channels and backplane bus       Yes         Potential separation digital outputs       •         • between the channels and backplane bus       Yes         Isolation       Soluton tested with         Solution tested with       Sol V DC         Ambient conditions       Ambient conditions         - min.       0 °C         • min.       0 °C         • max.       60 °C         Configuration software       •         • Steps function blocks (SFE)       See instruction list         • System functions (SFC)       see instruction list         • System function blocks (SFE)       Yes         - SCL       Yes         - SCL       Yes         - SCL       Yes         - GRAPH       Yes         - Block encryption       Yes         • Block encryption       Yes         • Width	Diagnostics indication LED	
Potential separation digital inputs         • between the channels and backplane bus       Yes         Potential separation digital outputs       •         • between the channels and backplane bus       Yes         Isolation       Isolation tested with         Solot tested with       500 V DC         Ambient conditions       0 °C         Ambient temperature during operation       • inin.         • min.       0 °C         configuration / header       Configuration / header         Configuration / header       • StEP 7         • STEP 7       Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package         • Ortgramming / header       • Command set         • Command set       see instruction list         • Nesting levels       8         • System functions (SFC)       see instruction list         • System function blocks (SFB)       see instruction list         Programming language       Yes         - LAD       Yes         - STL       Yes         - SCL       Yes         - GRAPH       Yes         - Hidraph@       Yes         Vidth       120 mm         Block encryption       Yes         Width       120 mm	<ul> <li>Status indicator digital input (green)</li> </ul>	Yes
Potential separation digital inputs       Yes         • between the channels and backplane bus       Yes         Potential separation digital outputs       • between the channels and backplane bus       Yes         Isolation tested with       500 V DC         Ambient conditions       60 °C         Ambient conditions       0 °C         configuration / header       60 °C         Configuration / header       60 °C         configuration / header       60 °C         • STEP 7       Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header       • Command set         • Ocmmand set       see instruction list         • Nesting levels       8         • System function SICKS (SFB)       see instruction list         Programming language       - LAD         - LAD       Yes         - SCL       Yes         - SRAPH       Yes         - GRAPH       Yes         - Hidraph®       Yes         Vidth       120 mm         + Height       120 mm         • User program protection/password protection       Yes         • Know-how protection       Yes         • User program protection/password protection	<ul> <li>Status indicator digital output (green)</li> </ul>	Yes
• between the channels and backplane bus       Yes         Potential separation digital outputs       •         • between the channels and backplane bus       Yes         Isolation       •         Isolation tested with       500 V DC         Ambient conditions       •         Ambient memperature during operation       •         • min.       0 °C         • max.       60 °C         configuration / header       •         Configuration software       •         • STEP 7       Ves: STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header       •         • Command set       see instruction list         • Nesting levels       8         • System functions (SFC)       see instruction list         • System function blocks (SFB)       see instruction list         Programming language       -         - LAD       Yes         - SCL       Yes         - SCL       Yes         - GRAPH       Yes         - Hidraph®       Yes         Midth       120 mm         - Bick encryption       Yes; With S7 block Privacy         Dimensions       Yes         Width <td>Potential separation</td> <td></td>	Potential separation	
• between the channels and backplane bus       Yes         Potential separation digital outputs       •         • between the channels and backplane bus       Yes         Isolation       1         Isolation tested with       500 V DC         Ambient temperature during operation       •         • min.       0 °C         • max.       60 °C         configuration / header       •         Configuration software       •         • STEP 7       Ves; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header       •         • Command set       see instruction list         • System functions (SFC)       see instruction list         • System function blocks (SFB)       see instruction list         Programming language       -         - LAD       Yes         - FBD       Yes         - SCL       Yes         - GRAPH       Yes         - HiGraph®       Yes         Midth       120 mm         • User program protection/password protection       Yes         • Ligraph®       Yes         Midth       120 mm         • Hight       120 mm         Depth	Potential separation digital inputs	
Potential separation digital outputs         • between the channels and backplane bus         Isolation         Isolation         Isolation         Isolation tested with         Ambient conditions         Ambient conditions         Ambient conditions         Ambient conditions         Or C         • max.       60 °C         configuration / header         Configuration / header         • Command set         • System functions (SFC)         • System function blocks (SFB)         see instruction list         • System function blocks (SFB)         r= RBD         - FBD         - SCL         - SCL         - CFC         - GRAPH         - HiGraph®         * User program protection/password protection         * Block encryption         * Ves         - GRAPH         - Block encryption         *		Yes
• between the channels and backplane bus       Yes         Isolation       Isolation tested with         Ambient conditions       Ambient conditions         Ambient conditions       0 °C         configuration / header       60 °C         Configuration / header       Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header       ves; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header       see instruction list         • STEP 7       Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header       see instruction list         • Nesting levels       8         • System functions (SFC)       see instruction list         • System function blocks (SFB)       see instruction list         Programming language       -         - LAD       Yes         - SCL       Yes         - SCL       Yes         - GRAPH       Yes         - HiGraph0       Yes         Know-how protection       Yes; With S7 block Privacy         Dimensions       Yes; With S7 block Privacy         Width       120 mm         Height       120 mm         Height<		
Isolation       Isolation tested with     500 V DC       Ambient conditions       Ambient memorature during operation       • min.     0 °C       • max.     60 °C       configuration / header       Configuration software       • STEP 7       V4.2 SP3       configuration software       • Command set       • Command set       • Nesting levels       • System function blocks (SFB)       see instruction list       • System function blocks (SFB)       r = LAD       - LAD       - STL       - STL       - SCL       - SCL       - GRAPH       - HiGraph®       Yes       Know-how protection/password protection       • Block encryption       Yes       Width       120 mm       Height       Depth       130 mm       Weights		Yes
Ambient conditions         Ambient temperature during operation         • min.       0 °C         • max.       60 °C         configuration / header         Configuration software         • STEP 7       Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header         • Command set       see instruction list         • Nesting levels       8         • System functions (SFC)       see instruction list         • System function blocks (SFB)       see instruction list         Programming language       Yes         — LAD       Yes         — SCL       Yes         — SCL       Yes         — GRAPH       Yes         — HiGraph®       Yes         — HiGraph®       Yes         Vidth       120 mm         • Block encryption       Yes; With S7 block Privacy         Vidth       125 mm         Depth       130 mm	Isolation	
Ambient conditions         Ambient temperature during operation         • min.       0 °C         • max.       60 °C         configuration / header         Configuration software         • STEP 7       Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header         • Command set       see instruction list         • Nesting levels       8         • System functions (SFC)       see instruction list         • System function blocks (SFB)       see instruction list         Programming language       Yes         — LAD       Yes         — SCL       Yes         — SCL       Yes         — GRAPH       Yes         — HiGraph®       Yes         — HiGraph®       Yes         Vidth       120 mm         • Block encryption       Yes; With S7 block Privacy         Vidth       125 mm         Depth       130 mm	Isolation tested with	500 V DC
Ambient temperature during operation       0 °C         • max.       60 °C         configuration / header       60 °C         Configuration software       9 °C         • STEP 7       Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header       9 °C         • Command set       see instruction list         • Nesting levels       8         • System functions (SFC)       see instruction list         • System function blocks (SFB)       see instruction list         Programming language       - LAD         - LAD       Yes         - FBD       Yes         - STL       Yes         - SCL       Yes         - GRAPH       Yes         - GRAPH       Yes         - HiGraph®       Yes; With S7 block Privacy         Dimensions       120 mm         Width       125 mm         Depth       130 mm         Weight, aprox.       640 g		
• min.0 °C• max.60 °C• STEP 7Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3configuration / programming / header• Command setsee instruction list• Nesting levels8• System functions (SFC)see instruction list• System function blocks (SFB)see instruction listProgramming language LADYes- FBDYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®Yes- HiGraph®YesWath120 mmHeight125 mmDepth130 mmWeight, approx.640 g		
max. 60 °C  Configuration / header  Configuration software      • STEP 7      Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3  Configuration / programming / header      Command set      • Command set      · Command set      · System functions (SFC)      see instruction list      · System function blocks (SFB)      see instruction list      Programming language      - LAD      - FBD      - STL      - SCL      Yes      - SCL      Yes      - SCL      Yes      - GRAPH      Yes      - HiGraph®      Know-how protection      · User program protection/password protection      · User program protection/password protection      · User program protection/password protection      · Block encryption      Ves      Width      120 mm      Height      Depth      Yes      640 g		0 °C
configuration / header         Configuration software         Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header         • Command set       see instruction list         • Nesting levels       8         • System functions (SFC)       see instruction list         • System function blocks (SFB)       see instruction list         Programming language       -         - LAD       Yes         - FBD       Yes         - SCL       Yes         - SCL       Yes         - GRAPH       Yes         - HiGraph®       Yes         - HiGraph®       Yes         Width       120 mm         Block encryption       Yes; With S7 block Privacy         Dimensions       130 mm         Weight sprox.       640 g		
Configuration software       Yes; STEP 7         Ves; STEP 7       Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header       see instruction list         • Command set       see instruction list         • Nesting levels       8         • System functions (SFC)       see instruction list         • System function blocks (SFB)       see instruction list         Programming language       -         - LAD       Yes         - FBD       Yes         - SCL       Yes         - SCL       Yes         - GRAPH       Yes         - HiGraph®       Yes         Width       120 mm         • Block encryption       Yes; With S7 block Privacy         Dimensions       120 mm         Weight       130 mm         Weight, approx.       640 g		
• STEP 7       Yes; STEP 7 V5.5 SP2 or higher and S7-Technology option package V4.2 SP3         configuration / programming / header       see instruction list         • Command set       see instruction list         • Nesting levels       8         • System functions (SFC)       see instruction list         • System function blocks (SFB)       see instruction list         Programming language       -         - LAD       Yes         - SFD       Yes         - SCL       Yes         - SCL       Yes         - CFC       Yes         - GRAPH       Yes         - HiGraph®       Yes         Vidth       120 mm         Height       125 mm         Depth       130 mm         Weight, approx.       640 g		
V4.2 SP3         configuration / programming / header         • Command set       see instruction list         • Nesting levels       8         • System functions (SFC)       see instruction list         • System function blocks (SFB)       see instruction list         Programming language       -         - LAD       Yes         - FBD       Yes         - STL       Yes         - SCL       Yes         - CFC       Yes         - GRAPH       Yes         - HiGraph®       Yes         Know-how protection/password protection       Yes         • User program protection/password protection       Yes         • Block encryption       Yes; With S7 block Privacy         Dimensions       120 mm         Height       125 mm         Depth       130 mm         Weights       640 g		
• Command setsee instruction list• Nesting levels8• System functions (SFC)see instruction list• System function blocks (SFB)see instruction list• System function blocks (SFB)see instruction listProgramming language LADYes- FBDYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®YesVidth120 mm+ leight120 mmHeight130 mmWeight, approx.640 g	Configuration software	Yes: STEP 7 V5 5 SP2 or higher and S7-Technology option package
• Nesting levels8• System functions (SFC)see instruction list• System function blocks (SFB)see instruction listProgramming languageYes- LADYes- FBDYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®YesVes program protection/password protectionYes• Block encryptionYes; With S7 block PrivacyVidth120 mmHeight125 mmDepth130 mmWeight, approx.640 g	Configuration software	
• System functions (SFC)see instruction list• System function blocks (SFB)see instruction listProgramming language LADYes- FBDYes- STLYes- SCLYes- CFCYes- GRAPHYes- Higraph®YesWidth120 mmHeight125 mmDepth130 mmWeight, approx.640 g	Configuration software • STEP 7	
• System function blocks (SFB)see instruction listProgramming language LADYes- FBDYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®Yesblock encryptionYesVist S7 block PrivacyDimensionsWidth120 mmHeight130 mmWeights640 g	Configuration software • STEP 7 configuration / programming / header	V4.2 SP3
Programming language       -         - LAD       Yes         - FBD       Yes         - STL       Yes         - SCL       Yes         - CFC       Yes         - GRAPH       Yes         - HiGraph®       Yes         Know-how protection       Yes         • User program protection/password protection       Yes; With S7 block Privacy         Dimensions       120 mm         Width       125 mm         Depth       130 mm         Weights       640 g	Configuration software • STEP 7 configuration / programming / header • Command set	V4.2 SP3 see instruction list
- LADYes- FBDYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®YesKnow-how protectionYes• User program protection/password protectionYes• User program protectionYes• Weight120 mm• Weight, approx.640 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels	V4.2 SP3 see instruction list 8
- LADYes- FBDYes- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®YesKnow-how protectionYes• User program protection/password protectionYes• User program protectionYes• Weight120 mm• Weight, approx.640 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • System functions (SFC)	V4.2 SP3 see instruction list 8 see instruction list
- STLYes- SCLYes- CFCYes- GRAPHYes- HiGraph®YesKnow-how protectionYes• User program protection/password protectionYes; With S7 block Privacy• Block encryptionYes; With S7 block PrivacyDimensions120 mmWidth125 mmDepth130 mmWeight, approx.640 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB)	V4.2 SP3 see instruction list 8 see instruction list
- SCLYes- CFCYes- GRAPHYes- HiGraph®YesKnow-how protectionYes• User program protection/password protectionYes• Block encryptionYes; With S7 block PrivacyDimensions120 mmWidth125 mmDepth130 mmWeight, approx.640 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language	V4.2 SP3 see instruction list 8 see instruction list see instruction list
- SCLYes- CFCYes- GRAPHYes- HiGraph®YesKnow-how protectionYes• User program protection/password protectionYes• Block encryptionYes; With S7 block PrivacyDimensions120 mmWidth125 mmDepth130 mmWeight, approx.640 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD	V4.2 SP3 see instruction list 8 see instruction list see instruction list Yes
- CFCYes- GRAPHYes- HiGraph®YesKnow-how protectionYes• User program protection/password protectionYes; With S7 block Privacy• Block encryptionYes; With S7 block PrivacyDimensions120 mmWidth125 mmDepth130 mmWeights440 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD	V4.2 SP3 see instruction list 8 see instruction list see instruction list Yes Yes
GRAPHYes HiGraph®YesKnow-how protectionYes• User program protection/password protectionYes; With S7 block Privacy• Block encryptionYes; With S7 block PrivacyDimensions120 mmWidth120 mmHeight125 mmDepth130 mmWeights440 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD — STL	V4.2 SP3 see instruction list 8 see instruction list see instruction list Yes Yes Yes
— HiGraph®YesKnow-how protectionYes• User program protection/password protectionYes; With S7 block Privacy• Block encryptionYes; With S7 block PrivacyDimensions120 mmWidth120 mmHeight125 mmDepth130 mmWeights40 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD — STL — SCL	V4.2 SP3  see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes
Know-how protection       Yes         • User program protection/password protection       Yes         • Block encryption       Yes; With S7 block Privacy         Dimensions       120 mm         Width       125 mm         Depth       130 mm         Weights       640 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language LAD FBD STL SCL CFC	V4.2 SP3  see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes
• User program protection/password protectionYes• Block encryptionYes; With S7 block PrivacyDimensionsWidth120 mmHeight125 mmDepth130 mmWeightsWeight, approx.640 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC — GRAPH	V4.2 SP3  see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
• Block encryption       Yes; With S7 block Privacy         Dimensions       120 mm         Width       120 mm         Height       125 mm         Depth       130 mm         Weights       640 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph®	V4.2 SP3  see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Dimensions         Width       120 mm         Height       125 mm         Depth       130 mm         Weights       640 g	Configuration software • STEP 7 configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection	V4.2 SP3 see instruction list 8 see instruction list see instruction list Yes
Width120 mmHeight125 mmDepth130 mmWeightsWeight, approx.640 g	Configuration software <ul> <li>STEP 7</li> </ul> <li>configuration / programming / header <ul> <li>Command set</li> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> </ul> </li> <li>Programming language <ul> <li>LAD</li> <li>FBD</li> <li>STL</li> <li>SCL</li> <li>CFC</li> <li>GRAPH</li> <li>HiGraph®</li> </ul> </li> <li>Know-how protection</li> <li>User program protection/password protection</li>	V4.2 SP3  see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Height     125 mm       Depth     130 mm       Weights     640 g	Configuration software <ul> <li>STEP 7</li> </ul> <li>configuration / programming / header <ul> <li>Command set</li> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> </ul> </li> <li>Programming language <ul> <li>LAD</li> <li>FBD</li> <li>STL</li> <li>SCL</li> <li>CFC</li> <li>GRAPH</li> <li>HiGraph®</li> </ul> </li> <li>Know-how protection</li> <li>Block encryption</li>	V4.2 SP3  see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Depth     130 mm       Weights     640 g	Configuration software <ul> <li>STEP 7</li> </ul> <li>configuration / programming / header <ul> <li>Command set</li> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> </ul> </li> <li>Programming language <ul> <li>LAD</li> <li>FBD</li> <li>STL</li> <li>SCL</li> <li>CFC</li> <li>GRAPH</li> <li>HiGraph®</li> </ul> </li> <li>Know-how protection <ul> <li>Block encryption</li> </ul> </li>	V4.2 SP3  see instruction list 8 see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Weights       Weight, approx.       640 g	Configuration software <ul> <li>STEP 7</li> </ul> <li>configuration / programming / header <ul> <li>Command set</li> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> </ul> </li> <li>Programming language <ul> <li>LAD</li> <li>FBD</li> <li>STL</li> <li>SCL</li> <li>CFC</li> <li>GRAPH</li> <li>HiGraph®</li> </ul> </li> <li>Know-how protection <ul> <li>Block encryption</li> </ul> </li> <li>Dimensions</li> <li>Width</li>	V4.2 SP3  see instruction list 8 see instruction list 9 Yes
Weight, approx. 640 g	Configuration software  • STEP 7  configuration / programming / header  • Command set  • Nesting levels  • System functions (SFC)  • System function blocks (SFB)  Programming language  LAD  FBD  STL  SCL  CFC  GRAPH  HiGraph®  Know-how protection  • User program protection/password protection  • Block encryption  Dimensions  Width Height	V4.2 SP3         see instruction list         8         see instruction list         Yes         Ye
	Configuration software         • STEP 7         configuration / programming / header         • Command set         • Nesting levels         • System functions (SFC)         • System function blocks (SFB)         Programming language         - LAD         - FBD         - STL         - SCL         - CFC         - GRAPH         - HiGraph®         Know-how protection         • Block encryption         Dimensions         Width         Height         Depth	V4.2 SP3         see instruction list         8         see instruction list         Yes         Ye
_	Configuration software <ul> <li>STEP 7</li> </ul> <li>configuration / programming / header <ul> <li>Command set</li> <li>Nesting levels</li> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> </ul> </li> <li>Programming language <ul> <li>LAD</li> <li>FBD</li> <li>STL</li> <li>SCL</li> <li>CFC</li> <li>GRAPH</li> <li>HiGraph®</li> </ul> </li> <li>Know-how protection <ul> <li>Block encryption</li> </ul> </li> <li>Dimensions</li> <li>Width</li> <li>Height</li> <li>Depth</li>	V4.2 SP3         see instruction list         8         see instruction list         Yes         120 mm         125 mm         130 mm
last modified: 8/24/2021	Configuration software  • STEP 7  configuration / programming / header  • Command set  • Nesting levels  • System functions (SFC)  • System function blocks (SFB)  Programming language  - LAD  - FBD  - STL  - SCL  - CFC  - GRAPH  - HiGraph®  Know-how protection  • User program protection/password protection  • Block encryption  Dimensions  Width Height Depth Weights	V4.2 SP3         see instruction list         8         see instruction list         Yes         120 mm         125 mm         130 mm