SIEMENS

Data sheet

6ES7318-3EL00-0AB0



*** SPARE PART*** SIMATIC S7-300 CPU 319-3 PN/DP, CENTRAL PROCESSING UNIT WITH 1,4 MBYTE WORKING MEMORY, 1. INTERFACE MPI/DP 12MBIT/S, 2. INTERFACE DP-MASTER/SLAVE, 3. INTERFACE ETHERNET PROFINET, MICRO MEMORY CARD NECESSARY

General information	
Hardware product version	09
Firmware version	V2.8
Engineering with	
Programming package	STEP 7 V5.4 + SP5 or higher or STEP 7 V5.4 + SP4 or higher with HSP 186
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	2 A min.
Input current	
Current consumption (rated value)	1 050 mA
Current consumption (in no-load operation), typ.	400 mA
Inrush current, typ.	4 A
l²t	1.2 A ² ·s

Power loss	
Power loss, typ.	14 W
Memory	
Work memory	
• integrated	1 400 kbyte
• expandable	No
 Size of retentive memory for retentive data blocks 	700 kbyte
Load memory	
• Plug-in (MMC)	Yes
• Plug-in (MMC), max.	8 Mbyte
 Data management on MMC (after last programming), min. 	10 y
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
• without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.01 μs
for word operations, typ.	0.02 μs
for fixed point arithmetic, typ.	0.02 μs
for floating point arithmetic, typ.	0.04 μs
CPU-blocks	
Number of blocks (total)	4 096; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
Number, max.	4 096; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
Number, max.	4 096; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
Number, max.	4 096; Number range: 0 to 7999
• Size, max.	64 kbyte
ОВ	
• 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
Number of cyclic interrupt OBs	4; OB 32, 33, 34, 35 (OB 35: smallest settable clock pulse = 500 μs)
Number of process alarm OBs	1; OB 40

 Number of DPV1 alarm OBs 	3; OB 55, 56, 57
 Number of isochronous mode OBs 	1; OB 61
 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)
 Number of synchronous error OBs 	2; OB 121, 122
Nesting depth	
• per priority class	16
 additional within an error OB 	4

Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	2 047
— preset	Z 0 to Z 7
Counting range	
— can be set	Yes
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Туре	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	2 048
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	2 047
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	

Data areas and their retentivity	
retentive data area in total	All, max. 700 KB
Flag	

	0.4001.4
Number, max.	8 192 byte
Retentivity available	Yes; from MB 0 to MB 8191
 Retentivity preset 	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	
• Number, max.	4 096; Number range: 1 to 16000
• Size, max.	64 kbyte
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
• per priority class, max.	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
Inputs, adjustable	8 192 byte
 Outputs, adjustable 	8 192 byte
Inputs, default	256 byte
 Outputs, default 	256 byte
Subprocess images	
 Number of subprocess images, max. 	1
Digital channels	
• Inputs	65 536
— of which central	1 024
Outputs	65 536
— of which central	1 024
Analog channels	
• Inputs	4 096
— of which central	256
Outputs	4 096
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
• integrated	2

• via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	10
Rack	10
• Racks, max.	4
	8
 Modules per rack, max. 	O
Time of day	
Clock	
 Hardware clock (real-time) 	Yes
 retentive and synchronizable 	Yes
Backup time	6 wk; At 40 °C ambient temperature
 Deviation per day, max. 	10 s
 Behavior of the clock following expiry of backup 	Clock continues to run with the time at which the power failure
period	occurred
Operating hours counter	
Number	4
 Number/Number range 	0 to 3
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1 hour
• retentive	Yes; Must be restarted at each restart
Clock synchronization	
• supported	Yes
● to MPI, master	Yes
● to MPI, slave	Yes
● to DP, master	Yes; With DP slave only slave clock
• to DP, slave	Yes
• in AS, master	Yes
• in AS, slave	Yes
• on Ethernet via NTP	Yes; As client
Digital inputs	
integrated channels (DI)	0
Digital outputs	
integrated channels (DO)	0
Analog inputs	
integrated channels (AI)	0
Analog outputs	
integrated channels (AO)	0
Interfaces	

Number of RS 485 interfaces 2 Number of RS 422 interfaces 0		
Number of RS 422 interfaces 0	Number of industrial Ethernet interfaces	1
Interface Interface type Integrated RS 485 interface Physics RS 485 Solated Yes Power supply to interface (15 to 30 V DC), max. 150 mA Functionality		
Interface type	Number of RS 422 interfaces	0
Physics	1. Interface	
Solated Yes	Interface type	Integrated RS 485 interface
Power supply to interface (15 to 30 V DC), max. Functionality • MPI • PROFIBUS DP master • PROFIBUS DP slave • Point-to-point connection Mo MPI • Number of connections • Transmission rate, max. Services — PG/OP communication — S7 communication, as server — S7 communication — S7 communic	Physics	RS 485
Functionality	Isolated	Yes
	Power supply to interface (15 to 30 V DC), max.	150 mA
PROFIBUS DP master PROFIBUS DP slave Point-to-point connection No MPI Number of connections Transmission rate, max. 12 Mbit/s Services PG/OP communication PS basic communication PS communi	Functionality	
PROFIBUS DP slave Point-to-point connection No MPI Number of connections Transmission rate, max. PG/OP communication Sf basic communication Sf communication Yes S7 communication Yes S7 communication S7 communication Yes PS communication	• MPI	Yes
Point-to-point connection MPI Number of connections Transmission rate, max. 21 Mbit/s Services PG/OP communication Pes Global data communication Pes S7 basic communication Pes S7 communication Pes S7 communication Pes S7 communication Pes S8 Cervices PG/OP communication Pes S9 Cervices PS basic communication Pes S9 Cervices Pes S9 Cervices PEROPE S9 Cervices POP master PTransmission rate, max. Pes Services PG/OP communication Pes Services PG/OP communication Pes Services PG/OP communication Pes S9 Cervices PS basic communication Pes S9 Cervices PS basic communication Pes S9 Cervices PS communication Pes S9 Cervices PEquidistance Pes S9 Cervices Pes S9 Cervic	 PROFIBUS DP master 	Yes
MPI Number of connections Transmission rate, max. 21 Mbit/s Services - PG/OP communication Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server PPM master Transmission rate, max. 12 Mbit/s Number of DP slaves, max. 124 Services - PG/OP communication - S7 commu	 PROFIBUS DP slave 	Yes
Number of connections	 Point-to-point connection 	No
● Transmission rate, max. Services - PG/OP communication Yes - Routing Yes - Global data communication Yes - S7 basic communication Yes - S7 communication Yes - S7 communication, as client No; but via CP and loadable FB - S7 communication, as server Yes DP master ● Transmission rate, max. 12 Mbit/s ● Number of DP slaves, max. 124 Services - PG/OP communication Yes - Routing Yes - Global data communication No - S7 basic communication Yes; I blocks only - S7 communication Yes; I blocks only - S7 communication Yes; I blocks only - S7 communication Yes - S7 communication No - S7 communication Yes - Equidistance Yes - Isochronous mode No - SYNC/FREEZE Yes - Activation/deactivation of DP slaves - Number of DP slaves that can be	MPI	
Services	Number of connections	32
PG/OP communication PROuting Pes Policy Ages Policy Communication Pes	 Transmission rate, max. 	12 Mbit/s
Routing Rou	Services	
Global data communication Yes S7 basic communication Yes S7 communication Yes S7 communication, as client No; but via CP and loadable FB S7 communication, as server Yes DP master • Transmission rate, max. 12 Mbit/s • Number of DP slaves, max. 124 Services — PG/OP communication Yes — Routing Yes — Global data communication No — S7 basic communication Yes; I blocks only — S7 communication Yes — S7 communication Yes — S7 communication, as client No — S7 communication, as server Yes — Equidistance Yes — Lochronous mode No — SYNC/FREEZE Yes — Activation/deactivation of DP slaves — Number of DP slaves that can be 8	— PG/OP communication	Yes
S7 basic communication S7 communication S7 communication, as client S7 communication, as server S7 communication, as server Yes PP master I Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S8 communication S9 communication	— Routing	Yes
— S7 communication, as client — S7 communication, as server — Transmission rate, max. — Number of DP slaves, max. — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 basic communication — S7 communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Lsochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be 8	— Global data communication	Yes
— S7 communication, as client — S7 communication, as server PP master I Transmission rate, max. No; but via CP and loadable FB — S7 communication, as server I Transmission rate, max. I 24 Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be No Yes No Yes Yes Yes Yes Aumober of DP slaves that can be 8	 S7 basic communication 	Yes
— S7 communication, as server Por master ■ Transmission rate, max. ■ Number of DP slaves, max. 124 Services — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be 12 Mbit/s 12 Mbit/s 12 Mbit/s 124 Services Yes Yes Yes Yes Yes Yes Yes	— S7 communication	Yes
P master ● Transmission rate, max. ● Number of DP slaves, max. 124 Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - Equidistance - Isochronous mode - SYNC/FREEZE - Activation/deactivation of DP slaves - Number of DP slaves that can be 124 124 124 125 124 126 124 127 128 129 129 129 129 129 120 120 120	 S7 communication, as client 	No; but via CP and loadable FB
 Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication Yes — Routing Yes — Global data communication No — S7 basic communication Yes; I blocks only — S7 communication Yes — S7 communication Yes — S7 communication, as client No — S7 communication, as server Yes — Equidistance Yes — Isochronous mode No — SYNC/FREEZE Yes — Activation/deactivation of DP slaves Yes — Number of DP slaves that can be 	 S7 communication, as server 	Yes
 Number of DP slaves, max. 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 No — SYNC/FREEZE Yes — Activation/deactivation of DP slaves Yes — Number of DP slaves that can be 	DP master	
Services - PG/OP communication Yes - Routing Yes - Global data communication No - S7 basic communication Yes; I blocks only - S7 communication Yes - S7 communication Yes - S7 communication, as client No - S7 communication, as server Yes - Equidistance Yes - Isochronous mode No - SYNC/FREEZE Yes - Activation/deactivation of DP slaves - Number of DP slaves that can be 8	Transmission rate, max.	12 Mbit/s
 — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication — S7 communication, as client — S7 communication, as server — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be 	Number of DP slaves, max.	124
 Routing Global data communication S7 basic communication Yes; I blocks only S7 communication Yes S7 communication, as client S7 communication, as server Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves No Yes Yes No SYNC/FREEZE Yes Activation/deactivation of DP slaves 8 	Services	
- Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - S7 communication, as server - Equidistance - Isochronous mode - SYNC/FREEZE - Activation/deactivation of DP slaves - Number of DP slaves that can be	— PG/OP communication	Yes
 — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be Yes; I blocks only Yes — Yes — Yes — Yes — Activation/deactivation of DP slaves — 8 	— Routing	Yes
 — S7 communication — S7 communication, as client — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be 	— Global data communication	No
 S7 communication, as client S7 communication, as server Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves Number of DP slaves that can be 	 — S7 basic communication 	Yes; I blocks only
 — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be 	— S7 communication	Yes
 — S7 communication, as server — Equidistance — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be Yes 8 	 — S7 communication, as client 	No
 Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves No Yes Activation/deactivation of DP slaves Number of DP slaves that can be 8 		Yes
 — Isochronous mode — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be 8 		Yes
 — SYNC/FREEZE — Activation/deactivation of DP slaves — Number of DP slaves that can be 8 	·	No
 Activation/deactivation of DP slaves Number of DP slaves that can be 8 		Yes
— Number of DP slaves that can be		

 — Direct data exchange (slave-to-slave communication) 	Yes; As subscriber
— 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
DP slave	
Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes; only with passive interface
• Address area, max.	32
• User data per address area, max.	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; with interface active
 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 communication) 	Yes
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	Integrated RS 485 interface
Physics	RS 485
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	200 mA
Functionality	
• MPI	No
 PROFINET IO Controller 	No
PROFINET IO Device	No
• PROFINET CBA	No
 PROFIBUS DP master 	Yes
PROFIBUS DP slave	Yes
Open IE communication	No

No
No
12 Mbit/s
124
Yes
Yes
No
Yes; I blocks only
Yes
No
Yes; Connection configured on one side only
Yes
Yes; OB 61
Yes
Yes
8
Yes; As subscriber
Yes
8 kbyte
8 kbyte
244 byte
244 byte
The latest GSD file is available at: http://www.siemens.com/profibus-gsd
12 Mbit/s
Yes; only with passive interface
32
32 byte
02.2).0
Yes
Yes; with interface active
No
No
Yes

 S7 communication, as server 	Yes; Connection configured on one side only
 — Direct data exchange (slave-to-slave communication) 	Yes
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte

3. Interface	
Interface type	PROFINET
Physics	Ethernet RJ45
Isolated	Yes
automatic detection of transmission rate	Yes; 10/100 Mbit/s
Autonegotiation	Yes
Autocrossing	Yes
Interface types	
Number of ports	1
• integrated switch	No
Functionality	
• MPI	No
 PROFINET IO Controller 	Yes
PROFINET IO Device	No
• PROFINET CBA	Yes
 PROFIBUS DP master 	No
 PROFIBUS DP slave 	No
Open IE communication	Yes; Via TCP/IP, ISO on TCP, and UDP
Web server	Yes; only read function
 Number of HTTP clients 	5
PROFINET IO Controller	
Transmission rate, max.	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	No
— Open IE communication	Yes; Via TCP/IP, ISO on TCP, and UDP
— Prioritized startup	Yes
 Number of IO devices with prioritized startup, max. 	32
— Number of connectable IO Devices, max.	256
 Number of IO Devices with IRT and the option "high flexibility" 	256

— of which in line, max.	61
 Number of connectable IO Devices for RT, 	256
max.	
— of which in line, max.	256
 Activation/deactivation of IO Devices 	Yes
 Number of IO Devices that can be simultaneously activated/deactivated, max. 	8
 — IO Devices changing during operation (partner ports), supported 	Yes
 Number of IO Devices per tool, max. 	8
Device replacement without swap medium	Yes
— Send cycles	250 μs, 500 μs, 1 ms
— Updating time	$250~\mu s$ - $128~ms$ (with send cycle of $250~\mu s$); $500~\mu s$ - $256~ms$ (with send cycle of $500~\mu s$); 1 ms - $512~ms$ (with send cycle 1 ms); minimum value of the send cycle is also dependent on the set communication share for PROFINET IO, on the number of I/O devices, and on the volume of configured user data.
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
 User data consistency, max. 	254 byte
PROFINET CBA	
acyclic transmission	Yes
 cyclic transmission 	Yes
Open IE communication	
Number of connections, max.	32
 Local port numbers used at the system end 	0, 20, 21, 23, 25, 80, 102, 135, 161, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
Isochronous mode	
Isochronous operation (application synchronized up to terminal)	Yes; Via 2nd DP interface
Communication functions	
PG/OP communication	Yes
Data record routing	Yes
Global data communication	
• supported	Yes
Number of GD loops, max.	8
Number of GD packets, max.	8
 Number of GD packets, transmitter, max. 	8
 Number of GD packets, receiver, max. 	8
 Size of GD packets, max. 	22 byte
• Size of GD packet (of which consistent), max.	22 byte

S7 basic communication	
• supported	Yes
User data per job, max.	76 byte
User data per job (of which consistent), max.	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
S7 communication	
• 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 the SFCs/FCs of S7 Communication)
S5 compatible communication	
• supported	Yes; via CP and loadable FC
Open IE communication	
● TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
Number of connections, max.	32
 Data length for connection type 01H, max. 	1 460 byte
— Data length for connection type 11H, max.	8 192 byte
• ISO-on-TCP (RFC1006)	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	32
— Data length, max.	8 192 byte
• UDP	Yes; via integrated PROFINET interface and loadable FBs
 Number of connections, max. 	32
— Data length, max.	1 472 byte
Web server	
• supported	Yes; only read function
Number of HTTP clients	5
PROFINET CBA (at set setpoint communication load)	
Setpoint for the CPU communication load	20 %
Number of remote interconnection partners	32
Number of functions, master/slave	50
Total of all master/slave connections	3 000
 Data length of all incoming connections master/slave, max. 	24 000 byte
 Data length of all outgoing connections master/slave, max. 	24 000 byte
 Number of device-internal and PROFIBUS interconnections 	1 000
 Data length of device-internal und PROFIBUS interconnections, max. 	8 000 byte
-	8 000 byte 1 400 byte

 — Sampling frequency: Sampling time, min. 	200 ms
Number of incoming interconnections	100
Number of outgoing interconnections	100
Data length of all incoming interconnections, max.	3 200 byte
 Data length of all outgoing interconnections, max. 	3 200 byte
 Data length per connection, max. 	1 400 byte
Remote interconnections with cyclic transmission	
 Transmission frequency: Transmission interval, min. 	1 ms
 Number of incoming interconnections 	300
 Number of outgoing interconnections 	300
 Data length of all incoming interconnections, max. 	4 800 byte
 Data length of all outgoing interconnections, max. 	4 800 byte
 Data length per connection, max. 	250 byte
HMI variables via PROFINET (acyclic)	
 Number of stations that can log on for HMI variables (PN OPC/iMap) 	3; 2x PN OPC/1x iMap
 HMI variable updating 	500 ms
 Number of HMI variables 	600
 Data length of all HMI variables, max. 	9 600 byte
PROFIBUS proxy functionality	
— supported	Yes
 Number of linked PROFIBUS devices 	32
 Data length per connection, max. 	240 byte; Slave-dependent
Number of connections	
• overall	32
 usable for PG communication 	31
 reserved for PG communication 	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
 reserved for S7 basic communication 	0
— adjustable for S7 basic communication, min.	0

	max. • usable for S7 communication — reserved for S7 communication — adjustable for S7 communication, min. — adjustable for S7 communication, min. — adjustable for S7 communication, max. • total number of instances, max. S7 message functions Number of login stations for message functions, max. Process diagnostic messages Simultaneously active Alarm-S blocks, max. 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 status variables, max. — of which control variables, max. — of which control variables, max. — of which powerfail-proof • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — can be set — preset Service data • can be read out Ambient temperature during operation • min. • max. • max. • o ° C 60 ° C	
usable for S7 communication	usable for S7 communication — reserved for S7 communication — adjustable for S7 communication, min. — adjustable for S7 communication, min. — adjustable for S7 communication, max. • total number of instances, max. S7 message functions Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Yes Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. 14 Forcing • Forcing • Forcing, variables • Number of variables, max. — adjustable • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — can be set — preset • Can be read out Ambient temperature during operation • min. • max. • max. 10 0 °C Ambient temperature during operation • min. • max.	
- reserved for \$7 communication 0 - adjustable for \$7 communication, min adjustable for \$7 communication, max. • total number of instances, max. * total number of instances, max. * total number of instances, max. * total number of login stations for message functions, max. * business diagnostic messages Number of login stations for message functions, max. * business diagnostic messages * Yes * simultaneously active Alarm-S blocks, max. * 300 * Test commissioning functions * Status block * Siatus block * Yes; Up to 2 simultaneously * Single step * Yes Number of breakpoints * Status/control variable • Variables • Number of variables, max. - of which status variables, max. - of which status variables, max. - of which control variables, max. - of which control variables, max. 14 * Forcing • Forcing • Forcing, variables • Number of variables, max. - adjustable • Number of entries, max. - adjustable - of which powerfail-proof • Number of entries readable in RUN, max. - can be set - preset • can be read out * Ambient conditions * Ambient conditions	— reserved for S7 communication — adjustable for S7 communication, min. — adjustable for S7 communication, min. — adjustable for S7 communication, max. • total number of instances, max. S7 message functions Number of login stations for message functions, max. Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Ves Number of breakpoints 4 Status/control • Status/control variable • Variables • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. 14 Forcing • Forcing • Forcing, variables, max. Poresent • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — can be set — preset Service data • can be read out Ambient conditions Ambient conditions Ambient temperature during operation • min. • max. • ona conditions Ambient canditions Ambient canditions Ambient canditions Ambient canditions Ambient temperature during operation • min. • max.	
- adjustable for S7 communication, min adjustable for S7 communication, max. • total number of instances, max. S7 message functions Number of login stations for message functions, max. Saccommunication Process diagnostic messages Yes simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Yes; Up to 2 simultaneously Yes Number of breakpoints 4 Status/control Status/control variables Variables Number of variables, max. Of which control variables, max. - of which control variables, max. - of which control variables, max. - Oliagnostic buffer Processent P	- adjustable for S7 communication, min adjustable for S7 communication, max. • total number of instances, max. S7 message functions Number of login stations for message functions, max. Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Yes Number of breakpoints 4 Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. 14 Forcing • Forcing • Forcing, variables, max. • Number of variables, max. 10 Diagnostic buffer • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — can be set — preset Service data • can be read out Ambient conditions Ambient conditions Ambient temperature during operation • min. • max. • total number of breakpoints 32; Depending on the cond basic communication 10 12; Up to 2 simultaneous 12; Up to 2 simultaneous 13; Up to 2 simultaneous 14 Yes Inputs, outputs, nemory bia 16 17; Ves 18; Up to 2 simultaneous 19; Up to 2 simultaneou	
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Ambient temperature during operation	• max. 60 °C	
● min. 0 °C		
• max. 60 °C	Configuration	
Configuration	Corniguration	

Configuration software		
• STEP 7	Yes; V5.4 SP4 or higher with HW update	
Programming		
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		
User program protection/password protection	Yes	
Dimensions		
Width	120 mm	
Height	125 mm	
Depth	130 mm	
Weights		
Weight, approx.	1 250 g	
last modified:	03/23/2017	