SIEMENS

Data sheet

6ES7312-1AE14-0AB0



SIMATIC S7-300, CPU 312 Central processing unit with MPI, Integr. power supply 24 V DC, Work memory 32 KB, Micro Memory Card required

Figure simila

General information	
HW functional status	01
Firmware version	V3.3
Engineering with	
Programming package	STEP 7 V5.5 + SP1 or higher or STEP 7 V5.2 + SP1 or higher with HSP 218
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.
Mains buffering	
 Mains/voltage failure stored energy time 	5 ms
 Repeat rate, min. 	1 s
Input current	
Current consumption (rated value)	650 mA
Current consumption (in no-load operation), typ.	140 mA
Inrush current, typ.	3.5 A
l²t	1 A ² ·s
Power loss	
Power loss, typ.	4 W
Memory	
Work memory	
• integrated	32 kbyte
expandable	No
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.	0.1 µs
for word operations, typ.	0.24 μs
for fixed point arithmetic, typ.	0.32 µs

for floating point arithmetic, typ.	1.1 µs
CPU-blocks	1.1 μο
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can
	be reduced by the MMC used.
DB	
Number, max.	1 024; Number range: 1 to 16000
• Size, max.	32 kbyte
FB	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	32 kbyte
	1.024: Number range: 0 to 7000
Number, max.Size, max.	1 024; Number range: 0 to 7999 32 kbyte
OB	oz ruyte
Number, max.	see instruction list
• Size, max.	32 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
 Number of process alarm OBs 	1; OB 40
 Number of startup OBs 	1; OB 100
 Number of asynchronous error OBs 	4; OB 80, 82, 85, 87
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	256
Retentivity	V
— adjustable	Yes
— lower limit	0 255
— upper limit — preset	Z 0 to Z 7
— preset Counting range	201021
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	Vac
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	20 lib. to
Retentive data area (incl. timers, counters, flags), max.	32 kbyte
Flag	256 hito
Size, max.	256 byte

Retentivity available	Yes; MB 0 to MB 255
Retentivity available Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	o, i memory byte
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
per priority class, max.	32 kbyte; Max. 2 KB per block
Address area	
I/O address area	
• Inputs	1 024 byte
• Outputs	1 024 byte
Process image	
• Inputs	1 024 byte
Outputs	1 024 byte
Inputs, adjustable	1 024 byte
Outputs, adjustable	1 024 byte
Inputs, default	128 byte
Outputs, default	128 byte
Digital channels	
• Inputs	256
— of which central	256
 Outputs 	256
— of which central	256
Analog channels	
• Inputs	64
of which central	64
Outputs	64
— of which central	64
11	
Hardware configuration	
Number of expansion units, max.	0
	0
Number of expansion units, max.	0
Number of expansion units, max. Number of DP masters	
Number of expansion units, max. Number of DP masters • integrated	0
Number of expansion units, max. Number of DP masters • integrated • via CP	0
Number of expansion units, max. Number of DP masters • integrated • via CP Number of operable FMs and CPs (recommended)	0 4
Number of expansion units, max. Number of DP masters • integrated • via CP Number of operable FMs and CPs (recommended) • FM	0 4 8
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP	0 4 8 8
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN	0 4 8 8
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack	0 4 8 8 8 4
Number of expansion units, max. Number of DP masters • integrated • via CP Number of operable FMs and CPs (recommended) • FM • CP, PtP • CP, LAN Rack • Racks, max.	0 4 8 8 8 4
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max.	0 4 8 8 8 4
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max.	0 4 8 8 8 4
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Time of day Clock	0 4 8 8 8 4
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Rack Nack Nodules per rack, max. Modules per rack, max. Time of day Clock Software clock	0 4 8 8 8 4 1 1 8
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Rack Racks, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable	0 4 8 8 4 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON	0 4 8 8 4 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter	0 4 8 8 4 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Rack Racks, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number	0 4 8 8 4 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off 1
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number/Number range	0 4 8 8 8 4 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off 1 0
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number/Number range Range of values	0 4 8 8 4 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off 1 0 0 to 2^31 hours (when using SFC 101)
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number Range of values Granularity	8 8 8 4 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off 1 0 0 to 2^31 hours (when using SFC 101) 1 h
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number Range of values Granularity retentive	0 4 8 8 4 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off 1 0 0 to 2^31 hours (when using SFC 101)
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number Range of values Granularity retentive Clock synchronization	9 4 8 8 8 4 4 9 1 1 8 8 9 1 1 8 9 1 1 1 8 9 1 1 1 1 1
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number Range of values Granularity retentive Clock synchronization supported	0 4 8 8 4 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off 1 0 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart Yes
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number Range of values Granularity retentive Clock synchronization supported to MPI, master	0 4 8 8 8 4 1 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off 1 0 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart Yes Yes
Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Rack Racks, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number Range of values Granularity retentive Clock synchronization supported to MPI, master to MPI, slave	0 4 8 8 8 4 1 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off 1 0 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart Yes Yes Yes
Number of expansion units, max. Number of DP masters integrated via CP Number of operable FMs and CPs (recommended) FM CP, PtP CP, LAN Rack Racks, max. Modules per rack, max. Modules per rack, max. Time of day Clock Software clock retentive and synchronizable Deviation per day, max. Behavior of the clock following POWER-ON Operating hours counter Number Number Range of values Granularity retentive Clock synchronization supported to MPI, master	0 4 8 8 8 4 1 1 8 Yes No; Buffered: No, Can be synchronized: Yes 10 s; Typ.: 2 s the clock continues at the time of day it had when power was switched off 1 0 0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart Yes Yes

Digital inputs	
Number of digital inputs	0
Digital outputs	
Number of digital outputs	0
Analog inputs	
Number of analog inputs	0
Analog outputs	
Number of analog outputs	0
Interfaces	
Number of industrial Ethernet interfaces	0
Number of PROFINET interfaces	0
Number of RS 485 interfaces	1; MPI
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	No
Interface types	
• RS 485	Yes
Output current of the interface, max.	200 mA
Protocols	
• MPI	Yes
 PROFIBUS DP master 	No
 PROFIBUS DP slave 	No
Point-to-point connection	No
MPI	
Transmission rate, max.	187.5 kbit/s
Services	
— PG/OP communication	Yes
— Routing	No
 Global data communication 	Yes
 — S7 basic communication 	Yes
— S7 communication	Yes; Only server, configured on one side
— S7 communication, as client	No
— S7 communication, as server	Yes
Protocols	
PROFIsafe	No
communication functions / header	
PG/OP communication	Yes
Data record routing	No
Global data communication	
• supported	Yes
Number of GD loops, max.	8
Number of GD packets, max.	8
Number of CD packets, transmitter, max. Number of CD packets, receiver, max.	8
Number of GD packets, receiver, max.	8 22 byte
Size of GD packets, max. Size of GD packet (of which consistent) max.	22 byte
Size of GD packet (of which consistent), max. S7 basic communication	22 byte
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 CP and loadable FB
 User data per job, max. 	180 byte; With PUT/GET
User data per job (of which consistent), max.	240 byte; as server
S5 compatible communication	

Number of connections • overable for PG communication — reserved for PG communication, min. — adjustable for ST basic communication, min. Process diagnostic messages **Number of login stations for message functions, max. **Stress diagnostic messages **Yes **Strusts block **Test commissioning functions **Strust block **Yes, Up to 2 simultaneously **Strust block **Yes, Up to 2 simultaneously **Strustable for Strust statics, max. — of which statics variables, max. **Of which statics variables, max. — of which statics variables, max. — of which control variables, max. **Of which control variables, max. **Ore of which control variables, max. **Ore of which powerfail-proof • present • Number of entries, max. **Ore of entries, max. **Ore of entries and the IRUN, max. **adjustable — of which powerfail-proof • present • Number of entries and the IRUN, max. **adjustable — of which powerfail-proof • present • Number of entries and the IRUN, max. **adjustable — of which powerfail-proof • present • Number of entries and the IRUN, max. **adjustable **Ore of entries and the IRUN, max. **adjustable **Ore of entries and the IRUN, max. **adjustable **Present • Present • Number of entries, max. **Ore of entries and the IRUN, max. **adjustable **adjustable **Ore of entries a	• supported	Yes; via CP and loadable FC
• usable for PG communication — reserved for PG communication, min. — adjustable for PG communication, min. — adjustable for PG communication, min. — adjustable for PC communication — reserved for PG communication — adjustable for PC communication, min. — adjustable for PC communication, min. — adjustable for PC broad communication, min. — adjustable for PS basic communication — adjustable for SP basic communication Process diagnostic messages — Process diagnostic messages		
• usable for PG communication — reserved for PG communication, min. — adjustable for PG communication, min. — adjustable for PG communication, min. — adjustable for PC communication — reserved for PG communication — adjustable for PC communication, min. — adjustable for PC communication, min. — adjustable for PC broad communication, min. — adjustable for PS basic communication — adjustable for SP basic communication Process diagnostic messages — Process diagnostic messages		6
- adjustable for PG communication, mix adjustable for PG communication, max usable for OP communication, mix adjustable for OP communication, min adjustable for OP communication, min adjustable for OP communication, min adjustable for SP tassic communication, mix adjustable for SP tassic communication, min Process diagnostic messages - Yes - simultaneously active Alarm S blocks, max Process diagnostic messages - Yes - Yes, Up to 2 simultaneously - Yes - Status block - Yes, Up to 2 simultaneously - Yes - Status-control - Yes - Status-control - Yes - Status-control - Yes - Status-control - Yes - Number of variables, max of which status variables, max of which control variables, max of which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof - Number of entries, max adjustable - or which powerfail-proof -	 usable for PG communication 	5
usable for OP communication, max. usable for OP communication, min. adjustable for OP communication, max. usable for SP basic communication, max. usable for SP basic communication, min. adjustable for SP basic communication, max. adjustable for Basic for message functions, max. adjustable for Basic functions (SP) adjustable for Basic functions (SP) adjustable for Basic functions (SPC) adjus	 reserved for PG communication 	1
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- usable for OP communication - reserved for SP communication, min adjustable for OP communication, min adjustable for OP communication, min adjustable for SP basic communication - adjustable for SP basic communication, min adjustable for SP basic communication, max. SP research functions SI was adjustable for SP basic communication, max. - Process diagnostic messages functions, max. - Status block - Yes. Up to 2 simultaneously - Yes Status control variable		5
- adjustable for OP communication, min adjustable for S7 basic communication - reserved for S7 basic communication - dijustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 basic communication, min adjustable for S7 basic communication, max. S7 message functions Number of login stations for message functions, max. Process diagnostic messages - yes simultaneously active Alarm-S blocks, max. Frest commissioning functions Status block Status block Status block Status block Status block Status control - variables - variables - variables - variables, max of which status variables, max of which status variables, max of which control variables, max of which control variables, max of which proverfail-proof - Number of variables, max adjustable - of which proverfail-proof - Number of entries, max adjustable - of which proverfail-proof - Number of entries readable in RUN, max adjustable - present - can be read out - variables - can be read out - variables - configuration of header - configuration of header - configuration florader - Configuration software - Status formula florader - Configuration software - Status formula florader - Command set - Nesting levels - Status formula florader - Command set - Nesting levels - Programming lenguage - LAO - FBD - Yes - Programming lenguage - LAO - FBD - Yes		5
- adjustable for OP communication, max. • usable for S7 basic communication — reserved for S7 basic communication, min. — adjustable for S7 basic communication, max. 27 message functions Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm's blocks, max. Sinultaneously active Alarm's blocks, max. Status block Single step Number of breakpoints Status block Ves; Up to 2 simultaneously Ves Number of breakpoints Status block Status scontrol Status	 reserved for OP communication 	1
- adjustable for OP communication, max. • usable for S7 basic communication — reserved for S7 basic communication, min. — adjustable for S7 basic communication, max. 27 message functions Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm's blocks, max. Sinultaneously active Alarm's blocks, max. Status block Single step Number of breakpoints Status block Ves; Up to 2 simultaneously Ves Number of breakpoints Status block Status scontrol Status		1
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- adjustable for S7 basic communication, max. S7 message functions Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm-S blocks, max. Process diagnostic messages simultaneously active Alarm-S blocks, max. 300 Test commissioning functions Status block Yes; Up to 2 simultaneously Single step Yes Number of breakpoints • Status/control variable • Variables • Number of variables, max. — of which control variables, max. — of which control variables, max. Horicing • Forcing • Forcing, variables • Number of variables, max. • Number of variables, max. • Number of variables, max. — adjustable • present • Number of variables, max. — adjustable — of which powerfall-proof • Number of entries, max. — adjustable — preset • Number of entries readable in RUN, max. — adjustable — preset • Present • Number of entries readable in RUN, max. — adjustable — preset • Number of or entries readable in RUN, max. — adjustable — preset • Ves Service data • can be read out Ambient conditions Ambient conditi	 adjustable for S7 basic communication, min. 	0
Number of login stations for message functions, max. Process diagnostic messages Status block Single step Number of breakpoints Status block Status/control variable Variables Number of variables, max. - of which status variables, max. - Forcing Forcing, variables Number of variables, max. - of which status variables, max. - of which ontrol variables, max. - of which powerfail-prof • Prorcing, variables • Number of variables, max. - adjustable - or which powerfail-prof • Number of entries, max. - adjustable - or which powerfail-prof • Number of entries readable in RUN, max. - adjustable - preset • Number of entries readable in RUN, max. - adjustable - preset • Number of entries readable in RUN, max. - adjustable - preset • Number of entries readable in RUN, max. - adjustable - preset • Number of entries readable in RUN, max. - adjustable - preset • Number of entries readable in RUN, max. - adjustable - preset • Ves - Yes - Y		2
Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm-S blocks, max. Prost commissioning functions Status block Single step Number of breakpoints • Status/control • 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 status variables, max. — of which control variables, max. — of which function because of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. — of which provinces of variables, max. — of which status variables, max. — of which provinces of variables, max. — of which provinces of variables, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — present • Present • Number of entries readable in RUN, max. — adjustable — preset Sarvice data • can be read out Ambient conditions Ambient conditions Ambient temperature during operation • min. • or C configuration / header • STEP 7 Yes: V5.2 SP1 or higher with HW update of Configuration software • STEP 7 Yes: V5.2 SP1 or higher with HW update of System function blocks (SFB) Programming language — LAD — FBD Yes Yes	-	
process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Yes Number of breakpoints 4 Status/control variable • Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which status variables, max. — of which control variables • Number of variables, max. — of which control variables, max. — of which control variables, max. — 10 Forcing • Forcing, variables • Number of variables, max. — 10 Diagnostic buffer • present • present • Number of entries, max. — adjustable — of which powerfali-proof • Number of entries readable in RUN, max. — adjustable — preset • can be read out Service data • can be read out Ambient conditions Ambient conditions Ambient conditions Ambient conditions of programming / header • STEP 7 Ves: V5.2 SP1 or higher with HW update configuration / programming / header • Command set • Nesting levels • System function bocks (SFB) Programming language — LAD — FBD Ves Ves Ves Ves Ves Ves Ves Ve		6; Depending on the configured connections for PG/OP and S7 basic
simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints • Status/scontrol • Status/scontrol variable • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. • Forcing • Forcing, variables • Number of variables, max. • Number of variables, max. — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — or which powerfail-proof • Number of entries readable in RUN, max. — adjustable — or which powerfail-proof • Number of entries readable in RUN, max. — adjustable — or which powerfail-proof • Number of entries readable in RUN, max. — adjustable — or which powerfail-proof • Number of entries readable in RUN, max. — adjustable — or which powerfail-proof • Number of entries readable in RUN, max. — adjustable — or which powerfail-proof • No O or or hich powerfail-proof • Comfiguration of ware • SEEP 7 Ves: V5.2 SP1 or higher with HW update configuration / programming / header • Command set • Nesting levels • System function blocks (SFE) System function blocks (SFB) Programming language — LAD — FBD Ves		communication
Status block Yes, Up to 2 simultaneously Single step Yes Number of breakpoints 4 Status/control variable Yes • Variables Inputs, outputs, memory bits, DB, times, counters • Number of variables, max. 30 • Of which status variables, max. 14 Forcing • Forcing Yes • Number of variables, max. 10 Diagnostic buffer • Present Yes • Number of entries, max. 500 • Aumber of entries readable in RUN, max. 499 • Parest 10 • Number of entries readable in RUN, max. 499 • preset 10 • Number of entries readable in RUN, max. 499 - adjustable Yes; From 10 to 499 - preset 10 * Ambient conditions Ambient temperature during operation • min. 0 °C configuration / hoader Configuration / programming / header • Orommand set see instruction list • Nesting levels 8 • System function blocks (SFB) see instruction list Programming language - LAD - FBD Yes		
Status block Single step Yes Number of breakpoints 4 Status/control variable • Variables • Number of variables, max. — of which status variables, max. — of which status variables, max. — of which status variables, max. - of which status variables, max. - of which control variables, max. - of which powerfail-proof • Forcing, • Number of variables, max. - adjustable — of which powerfail-proof • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset Service data • can be read out Ambient conditions Ambient temperature during operation • min. • on "C configuration / header Configuration / header Configuration software • STEP 7 Yes; V5.2 SP1 or higher with HW update configuration fyrogramming / header • Command set • Nesting levels • System function blocks (SFB) Programming language — LAD — FBD Yes		300
Single step Number of breakpoints 4 Status/control • Status/control variables • Variables • Number of variables, max. — of which status variables, max. — of which control variables, max. — of which postrol variables, max. — 10 Diagnostic buffer • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset — of which powerfail-proof • Number of entries readable in RUN, wax. — adjustable — preset — of which powerfail-proof • Number of entries readable in RUN, wax. — adjustable — preset — of which powerfail-proof • Number of entries readable in RUN, wax. — adjustable — preset — of which powerfail-proof • Non • Non • Non • On't of the power	Test commissioning functions	
Number of breakpoints	Status block	Yes; Up to 2 simultaneously
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• Status/control variable • Variables • 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. 10 Diagnostic buffer • present • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset • preset • ves; From 10 to 499 — preset • can be read out Ambient conditions Ambient conditions Ambient temperature during operation • min. • max. • 60 °C configuration / header Configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD Yes		4
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of which status variables, max of which control variables, max. 14 Forcing • Forcing • Forcing Yes • Forcing, variables • Number of variables, max. 10 Diagnostic buffer • present • Number of entries, max adjustable of which powerfail-proof • Number of entries readable in RUN, max adjustable preset preset yes; From 10 to 499 preset yes Ambient conditions Ambient conditions Ambient temperature during operation • min. • max of 0° C configuration / header Configuration of header Configuration of programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language LAD FBD Yes Yes Number of entries are retained Yes PSD FBD Yes Yes STEP 7 Yes; V5.2 SP1 or higher with HW update System function list System function list System function list see instruction list Programming language LAD FBD Yes Yes Yes Yes Yes Yes Yes FBD Yes Yes FBD Yes Yes Yes Yes Yes Yes Yes FBD Yes FBD Yes	Variables	Inputs, outputs, memory bits, DB, times, counters
Forcing Forcing Forcing Forcing, variables Forcing,	 Number of variables, max. 	30
Forcing Forcing Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. - adjustable - of which powerfail-proof Number of entries readable in RUN, max. - adjustable - of which powerfail-proof Number of entries readable in RUN, max. - adjustable - preset 10 Service data - can be read out Ambient conditions Ambient conditions Ambient temperature during operation - max 60 °C configuration / header Configuration of programming / header - Configuration of programming / header - Nesting levels - Nesting levels - System function blocks (SFB) - Programming language - LAD - FBD Yes	of which status variables, max.	30
Forcing Forcing, variables Forcing, variables Inputs, outputs Inputs, outputs, outputs Inputs, outputs, outputs Inputs, outputs, outputs, outputs Inputs, outputs, outputs, outputs Inputs, outputs, ou	— of which control variables, max.	14
Forcing, variables Number of variables, max. Diagnostic buffer present Number of entries, max. Sou Adjustable Of which powerfail-proof Number of entries readable in RUN, max. Adjustable Preset Of an be read out Service data Can be read out Ambient conditions Ambient temperature during operation min. Of and	Forcing	
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Present Number of entries, max. - adjustable - of which powerfail-proof Number of entries readable in RUN, max. - adjustable - preset - prese		10
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- adjustable Yes; From 10 to 499 preset 10 Service data • can be read out Yes Ambient conditions Ambient temperature during operation • min. 0 °C • max. 60 °C configuration / header Configuration software • STEP 7 Yes; V5.2 SP1 or higher with HW update 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 FBD FBD Yes	— of which powerfail-proof	100; Only the last 100 entries are retained
— preset 10 Service data	 Number of entries readable in RUN, max. 	499
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Ambient conditions Ambient temperature during operation • min. • max. 60 °C configuration / header Configuration software • STEP 7 Yes; V5.2 SP1 or higher with HW update configuration / programming / header • Command set • Nesting levels • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD Yes		
Ambient temperature during operation • min. • max. 60 °C configuration / header Configuration software • STEP 7 Yes; V5.2 SP1 or higher with HW update configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD Yes		Yes
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configuration / programming / header • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB) Programming language — LAD — FBD Yes Yes	_	
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 System functions (SFC) System function blocks (SFB) Programming language LAD FBD Yes Yes 		
 System function blocks (SFB) Programming language — LAD — FBD Yes Yes 	_	
Programming language — LAD Yes — FBD Yes		
LADFBDYesYes		see instruction list
— FBD Yes		
— STL Yes		Yes
	— STL	Yes

— SCL	Yes
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
 User program protection/password protection 	Yes
Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	270 g

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