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 similar

General information	
HW functional status	01
Firmware version	V3.3
Engineering with	<u> </u>
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 μ3
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can
Number of blocks (total)	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
FC	4.004.11
Number, max. Cina max.	1 024; Number range: 0 to 7999
• Size, max.	32 kbyte
OB • 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 time diam OBs Number of delay alarm OBs	2; OB 20, 21
Number of delay damin OBs 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	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	Van
• present	Yes SFB
TypeNumber	Unlimited (limited only by RAM capacity)
S7 times	Chiminited (infinited only by IVAINI capacity)
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	
• present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	32 kbyte
Flag	
• 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
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Number of RS 422 interfaces 1. Interface Interface type Isolated Interface types - R3 485 - Output current of the interface, max. - PROFIBUS DP master - PROFIBUS DP slave - Point-to-point connection No MPI - Transmission rate, max. - PROFO communication - Routing - Global data communication - S7 communication, as client - S7 communication, as server PROFISafe PROFIsafe PROFIsafe Communication Inuctions / hoader PROFO communication - S8 communication - S7 communication - S8 communication - S9 communication -		
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Isolated No Interface types	1. Interface	
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. 187.5 kbit/s Services — PG/OP communication — Routing — Global data communication — S7 communication — S7 communication, as server PG/OP communication — S7 communication — S7 communication — S7 communication — S8 base communication — S9 communication —	Interface type	Integrated RS 485 interface
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Transmission rate, max. Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 basic communication - S7 communication, as client - S7 communication, as server - Yes Protocols PROFISafe No communication functions / header PG/OP communication PROFO communication - S7 communication - S7 communication - S7 communication - S7 communication - S7 communication - S7 communication - Yes Protocols PROFO communication - Yes Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, freceiver, max. • Size of GD packet (of which consistent), max. Size of GD packet (of which consistent), max. S7 byte • User data per job, max. • User data per job (of which consistent), max. S7 communication • supported • supported • susported • sa server • sa client • User data per job, max. • Ves • as client • User data per job, max. • User data per job (of which consistent), max. S7 communication • supported • sa server • yes • as client • User data per job, max. • User data per job (of which consistent), max. S7 communication • supported • sa server • yes • as client • User data per job (of which consistent), max. S7 communication • S9 type type type type type type type type		No
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- Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server - Yes - S7 communication functions / header - PG/OP communication - S7 communication - S9 communication - S1 communication - S9 com	Services	
- Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as client - S7 communication, as server - Yes Protocols PROFIsafe - No Communication functions / header PG/OP communication - Supported - Number of GD loops, max Number of GD packets, max Number of GD packets, receiver, max Size of GD packets, max Size of GD packets, or seciver, max Size of GD packets (of which consistent), max. S7 basic communication - Supported - User data per job, max User data per job (of which consistent), max. S7 communication - S9 communication -	— PG/OP communication	Yes
	— Routing	No
— S7 communication Yes; Only server, configured on one side — S7 communication, as client No — S7 communication, as server Yes PROFIsafe PROFIsafe PG/OP communication Data record routing Rolobal data communication • supported • Number of GD packets, max. • Number of GD packets, max. • Number of GD packets, receiver, max. • Size of GD packets, receiver, max. • Size of GD packets, of Mich consistent), max. S7 basic communication • supported • User data per job, max. • User data per job (of which consistent), max. 76 byte • User data per job, max. • Supported • supported • S7 communication • supported • User data per job, max. • User data per job, max. • S7 communication • supported • S8 communication • supported • S9 communication • supported • User data per job, max. • S7 communication • supported • S9 communication • S9	 Global data communication 	Yes
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Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. 22 byte • Size of GD packet (of which consistent), max. 76 byte • User data per job, max. • 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) 77 communication • supported • support	communication functions / header	
Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. • Size of GD packet (of which consistent), max. • Size of GD packet (of which consistent), max. • Size of GD packet (of which consistent), max. • Size of GD packet (of which consistent), max. • Size of GD packet (of which consistent), max. • Size of GD packets, max. • User data per job, max. • User data per job (of which consistent), max. • Size of GD packets, max. • Size of GD packet, with Size of	PG/OP communication	Yes
Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. • Size of GD packet (of which consistent), max. • Size of GD packet (of which consistent), max. • Size of GD packet (of which consistent), max. • Size of GD packet (of which consistent), max. • Size of GD packet (of which consistent), max. • Size of GD packets, max. • User data per job, max. • User data per job (of which consistent), max. • Size of GD packets, max. • Size of GD packet, with Size of	Data record routing	No
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S7 basic communication • supported • User data per job, max. • 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 • as server • as client • User data per job, max. • User data per job, max. • User data per job (of which consistent), max. 180 byte; With PUT/GET • User data per job (of which consistent), max. 240 byte; as server		
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• User data per job (of which consistent), max. 240 byte; as server	• as client	Yes; Via CP and loadable FB
·	 User data per job, max. 	180 byte; With PUT/GET
S5 compatible communication	 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 **Strustable for Strust for message functions, max. **Strust block **Yes, Up to 2 simultaneously **Strust commonication for message functions, max. **A strust block **Yes, Up to 2 simultaneously **Strust commonication for message functions for PG/OP and S7 basic communication **Yes **Number of brackpoints **A strust block **Yes, Up to 2 simultaneously **Strust block **Yes, Up to 2 simultaneously **Yes **Number of variables, max. **A strust block **Number of variables, max. **A strust s	• 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
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	 adjustable for PG communication, min. 	1
- 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 Up to 3 simultaneously - Yes Up to 4 simultaneously - Yes Up to 4 si		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 programming / header - Command set - Nesting levels - System functions (SFC) - PED - Yes - Popsaming 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. 300 Test commissioning functions Status block Single step Number of breakpoints Status block Ves; Up to 2 simultaneously Ves Number of breakpoints Status block Status scontrol • Status Scontrol	 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. 300 Test commissioning functions Status block Single step Number of breakpoints Status block Ves; Up to 2 simultaneously Ves Number of breakpoints Status block Status scontrol • Status Scontrol		1
- usable for S7 basic communication - reserved for S7 basic communication - 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 messages functions, max. Process diagnostic messages - yes simultaneously active Alarm-S blocks, max. Process diagnostic messages - Yes simultaneously active Alarm-S blocks, max. Process diagnostic messages - Yes simultaneously active Alarm-S blocks, max. Prot to ommissioning functions Status block - Yes; Up to 2 simultaneously Single step - Yes - Variables - Variables - Variables - Variables - Number of variables, max of which status variables, max of which control variables, max of which powerfall-proof - Forcing - Forcing, variables - Number of variables, max adjustable - of which powerfall-proof - Number of entries, max adjustable - of which powerfall-proof - 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 - Number of entries readable in RUN, max adjustable - preset - Number of entries readable in RUN, max entries reada		5
- adjustable for S7 basic communication, min adjustable for S7 basic communication, max. S7 message functions Number of login stations for messages Process diagnostic messages simultaneously active Alarm-S blocks, max. Fost commissioning functions Status block Status block Status block Status control variables • Status/control variables, max. - of which status variables, max. - of which ontrol variables, max. - of which powerfall-proof • Porcing, variables • Number of variables, max. - adjustable - of which powerfall-proof • Number of entries, max. - adjustable - of which powerfall-proof • Number of entries readable in RUN, max. - adjustable - or which powerfall-proof • Number of entries readable in RUN, max. - adjustable - or which powerfall-proof • Number of entries readable in RUN, max. - adjustable - or which powerfall-proof • Number of entries readable in RUN, max. - adjustable - or which powerfall-proof • Number of entries readable in RUN, max. - adjustable - or which powerfall-proof • Number of entries readable in RUN, max. - adjustable - or which powerfall-proof • Number of entries readable in RUN, max. - adjustable - or which powerfall-proof • Number of entries readable in RUN, max. - adjustable - or which powerfall-proof • Number of entries readable in RUN, max. - adjustable - or which powerfall-proof • Number of entries readable in RUN, max. - adjustable - or which powerfall-proof • Number of entries readable in RUN, max. - adjustable - or which powerfall-proof • Number of entries readable in RUN, max. - degree the readable	•	2
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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 the state of variables, max. — of which status variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. — of which function of variables, max. — of which provential because the state of the s	-	
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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		
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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
Status/control variable Status/control variables Variables Number of variables, max. of which status variables, max. Forcing Forcing Forcing, variables Number of variables, max. 10 Diagnostic buffer vesent Number of entries, max. - adjustable of which powerfall-proof Number of entries readable in RUN, max. - adjustable preset 10 Service data a an be read out Ambient temperature during operation max. STEP 7 configuration / header Configuration software Stystem functions (SFC) System function blocks (SFB) Programming language — LAD PSD Which is data in 30 Inputs, outputs, memory bits, DB, times, counters 30 Inputs, outputs, memory bits, DB, times, counters 30 14 Yes 10 Yes Yes 10 Ves Yes From 10 to 499 Yes From 10 to 499 Yes From 10 to 499 O °C Configuration / header Configuration software STEP 7 Yes: V5.2 SP1 or higher with HW update o can be read out See instruction list System function blocks (SFB) Programming language — LAD — FBD Yes	Single step	Yes
• 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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Number of variables, max. — of which status variables, max. — of which control variables, max. — of which control variables, max. Forcing ● Forcing, variables ● Forcing, variables ● Number of variables, max. Diagnostic buffer ● present ● present ● present ● volumber of entries, max. — adjustable — of which powerfail-proof ● Number of entries readable in RUN, max. — adjustable — preset ● 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, wax. — adjustable — was to the read out Service data ● can be read out Ambient conditions Ambient temperature during operation ● min. ● o °C configuration / header Configuration / programming / header ● STEP 7 Yes; V5.2 SP1 or higher with HW update configuration of programming / header ● Command set ● Nesting levels ● System functions (SFC) see instruction list ● System function blocks (SFB) Programming language — LAD — FBD Yes	 Status/control variable 	Yes
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 software - STEP 7 - Yes; V5.2 SP1 or higher with HW update Nesting levels System functions (SFC) see instruction list System function blocks (SFB) Programming language - LAD - FBD - Yes Yes Yes Inputs, outputs Inputs Inputs, outputs Inputs Inp	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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Diagnostic buffer • present • present • Number of entries, max. — adjustable — of which powerfail-proof • Number of entries readable in RUN, max. — adjustable — preset — preset — preset — to an be read out Ambient conditions Ambient temperature during operation • min. • min. • max. 60 °C configuration / header Configuration / programming / header • Command set • Nesting levels • Nesting levels • System function blocks (SFB) Programming language — LAD — FBD Yes Vo Only Uny the last 100 entries are retained 100; Only the last 100 entries are retained 499 499 499 499 499 499 499 49		Inputs, outputs
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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
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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		
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 Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD Yes Yes 		Yes; V5.2 SP1 or higher with HW update
 Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD Yes Yes 		
 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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