6ES7315-2AH14-0AB0

Data sheet



SIMATIC S7-300, CPU 315-2DP Central processing unit with MPI Integr. power supply 24 V DC Work memory 256 KB 2nd interface DP master/slave Micro Memory Card required

Firmware version Product function I sochronous mode 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) permissible range, lower limit (DC) permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) Mains buffering Mains/voltage failure stored energy time Repeat rate, min. 1 s Input current Current consumption (rated value) Current consumption (raned value) Rower loss, typ. Power loss, typ. 4.5 W Memory Work memory Work memory I plug-in (MMC) Plug-in (MMC) Plug-in (MMC) Plug-in (MMC) Plug-in (MMC) Plug-in (MMC) Present Presert P	General information	
■ Isochronous mode 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) permissible range, lower limit (DC) permissible range, upper limit (DC) external protection for power supply lines (recommendation) Mains buffering ■ Mains/voltage failure stored energy time • Repeat rate, min. Input current Current consumption (rated value) Current consumption (in no-load operation), typ. Inrush current, typ. Power loss Power loss, typ. 4.5 W Memory Work memory • Integrated • expandable No Load memory • Plug-in (MMC) Plug-in (MMC) Plug-in (MMC), max. • Data management on MMC (after last programming), min. Backup • present • yes; Guaranteed by MMC (maintenance-free) • without battery • processing times for bit operations, typ. 0.05 µs	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) Mains buffering Mains buffering Mains buffering Mains buffering Mains voltage failure stored energy time 5 ms Repeat rate, min. 1 s Input current Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A IPt 1 A²-s Power loss Power loss, typ. 4.5 W Memory Work memory Mork memory Plug-in (MMC) 456 kbyte Plug-in (MMC) 756 kbyte Present 756 kbyte Present 756 kbyte Present 757 kg Guaranteed by MMC (maintenance-free) Without battery 757 kg Guaranteed by MMC (maintenance-free) Pve; Program and data CPU processing times for bit operations, typ. 0.05 µs	Product function	
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) permissible range, lower limit (DC) permissible range, upper limit (DC) external protection for power supply lines (recommendation) Mains buffering • Mains/voltage failure stored energy time • Repeat rate, min. Input current Current consumption (rated value) Current consumption (in no-load operation), typ. Inush current, typ. It 1 A²-s Power loss Power loss, typ. 4.5 W Memory Work memory • Integrated • expandable No Load memory • Plug-in (MMC) • Plug-in (MMC)	 Isochronous mode 	Yes
Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) Mains buffering • Mains/voltage failure stored energy time • Repeat rate, min. Input current Current consumption (rated value) Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 14 A²-s Power loss Power loss, typ. 4.5 W Memory Work memory • integrated • expandable Load memory • Plug-in (MMC) • Plug-in (MMC), max. • Data management on MMC (after last programming), min. Backup • present • yes; Guaranteed by MMC (maintenance-free) yes; Program and data CPU processing times for bit operations, typ. 0.05 µs	Engineering with	
Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) Mains buffering • Mains/voltage failure stored energy time • Repeat rate, min. Input current Current consumption (rated value) Current consumption (in no-load operation), typ. Inrush current, typ. It 1 A²-s Power loss Power loss, typ. Momory Work memory • integrated • expandable Load memory • Plug-in (MMC) • Plug-in (MMC), max. • Data management on MMC (after last programming), min. Backup • present • without battery For bit operations, typ. 19,2 V 24 V 18,2 V 26 N min. 19,2 V 27 N min. 28 N V 28 N V 28 N M 29 N min. 45 M MA 45 W Momory Work memory • Plug-in (MMC) • Plug-in (MMC) • Plug-in (MMC) • Plug-in (MMC) Max. • Data management on MMC (after last programming), min. Backup • present • without battery CPU processing times for bit operations, typ. 0.05 µs	Programming package	
permissible range, lower limit (DC) permissible range, upper limit (DC) 28.8 V external protection for power supply lines (recommendation) Mains buffering • Mains/voltage failure stored energy time • Repeat rate, min. Input current Current consumption (rated value) Current consumption (in no-load operation), typ. Inrush current, typ. It 1 1A² s Power loss Power loss, typ. Memory Work memory • integrated • expandable Load memory • Plug-in (MMC), max. • Data management on MMC (after last programming), min. Backup • present • without battery for bit operations, typ. 19.2 V 28.8 V 28.8 V 28.8 V 29.8 Min. 19.8 So mA 19.9 Max. 25.6 kbyte 25.6 kbyte 25.6 kbyte 25.6 kbyte 25.6 kbyte 25.7 So may consumption (in no-load operation), typ. 10.9 yes 25.7 So may consumption (in no-load operation), typ. 25.8 So mA 25.8 Max. 25.8 Kbyte 26.8 Kbyte 27.8 Kbyte 28.8 Kbyte 27.8 Kbyte 28.8 Kbyte 27.8 Kbyte 28.8 Kbyte 28.8 Kbyte 29.8 Kbyte 29.8 Kbyte 20.8 K	Supply voltage	
permissible range, upper limit (DC) external protection for power supply lines (recommendation) Mains buffering • Mains/voltage failure stored energy time • Repeat rate, min. Input current Current consumption (rated value) Current consumption (in no-load operation), typ. Inrush current, typ. It is Power loss Power loss Power loss, typ. Memory Work memory • integrated • expandable Load memory • Plug-in (MMC) • Plug-in (MMC), max. • Data management on MMC (after last programming), min. Backup • present • without battery CPU processing times for bit operations, typ. 2 A min. 3 A min. 4 A min. 5 Ms 4 S Ms 4 S Ms 4 S Ms 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 4 S W 5 Ma 6 W 6 W A C Maintenance-free) 7 Yes; Porgram and data CPU processing times for bit operations, typ. 6 0.05 µs	Rated value (DC)	24 V
external protection for power supply lines (recommendation) Mains buffering • Mains/voltage failure stored energy time • Repeat rate, min. Input current Current consumption (rated value) Current consumption (in no-load operation), typ. Inrush current, typ. It 1 A²-s Power loss Power loss, typ. Memory Work memory • integrated • expandable • expandable No Load memory • Plug-in (MMC) • Plug-in (MMC), max. • Data management on MMC (after last programming), min. Backup • present • without battery CPU processing times for bit operations, typ. 4 min. 5 min. 2 A min. 2 Min. 5 ms 5 ms 5 ms 5 ms 5 ms 6 mA 1 A²-s 1 A²-s 9 mA 1 A²-s 9 Elso mA 1 A²-s 1 A²-s 9 Elso mA 1 A²-s 1 A²-s 9 Elso mA 1 A²-s 1 A²-s	permissible range, lower limit (DC)	19.2 V
Mains buffering	permissible range, upper limit (DC)	28.8 V
Mains/voltage failure stored energy time Repeat rate, min. Input current Current consumption (rated value) Current consumption (in no-load operation), typ. Inou current, typ. If the state of the		2 A min.
Repeat rate, min. 1 s Input current Current consumption (rated value) 850 mA Current consumption (in no-load operation), typ. 150 mA Inrush current, typ. 3.5 A I²t 1 A²·s Power loss Power loss, typ. 4.5 W Memory Work memory integrated 256 kbyte expandable No Load memory Plug-in (MMC) Yes Plug-in (MMC), max. 8 Mbyte Plug-in (MMC), max. 8 Mbyte Plug-in (MMC), min. 8 Mbyte Plug-in (MMC) (after last programming), min. Backup present Yes; Guaranteed by MMC (maintenance-free) without battery Yes; Program and data CPU processing times for bit operations, typ. 0.05 μs	Mains buffering	
Current consumption (rated value) Current consumption (in no-load operation), typ. Inrush current, typ. It 150 mA Inrush current, typ. It 1 A²-s Power loss Power loss, typ. Work memory integrated expandable No Load memory Plug-in (MMC), max. Plug-in (MMC), max. Data management on MMC (after last programming), min. Backup e present e present ves; Guaranteed by MMC (maintenance-free) without battery Yes; Program and data CPU processing times for bit operations, typ. 150 mA 161 ma 162 s 163 ma 164 ma 165 mA 167 ma 16	 Mains/voltage failure stored energy time 	5 ms
Current consumption (rated value) Current consumption (in no-load operation), typ. Inrush current, typ. It 150 mA Inrush current, typ. It 1A2-s Power loss Power loss, typ. Work memory Integrated Expandable Individual memory Integrated Integrated	 Repeat rate, min. 	1 s
Current consumption (in no-load operation), typ. Inrush current,	Input current	
Inrush current, typ. If t 1 A²·s Power loss Power loss, typ. Memory Work memory • integrated • expandable Load memory • Plug-in (MMC) • Plug-in (MMC), max. • Data management on MMC (after last programming), min. Backup • present • without battery For bit operations, typ. 3.5 A 1 A²·s 1 A²·s 9 Ves 4.5 W 4.5	Current consumption (rated value)	850 mA
Power loss, typ. Power loss, typ. 4.5 W Memory Work memory integrated expandable Load memory Plug-in (MMC) Plug-in (MMC), max. Data management on MMC (after last programming), min. Backup present present without battery Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data CPU processing times for bit operations, typ.	Current consumption (in no-load operation), typ.	150 mA
Power loss Power loss, typ. 4.5 W Memory Work memory integrated expandable No Load memory Plug-in (MMC) Plug-in (MMC), max. Data management on MMC (after last programming), min. Backup present present ves; Guaranteed by MMC (maintenance-free) without battery Yes; Program and data CPU processing times for bit operations, typ.	Inrush current, typ.	3.5 A
Power loss, typ. Memory Work memory integrated expandable No Load memory Plug-in (MMC) Plug-in (MMC), max. Plug-in (MMC), max. Data management on MMC (after last programming), min. Backup present very Guaranteed by MMC (maintenance-free) without battery Yes; Program and data CPU processing times for bit operations, typ. 4.5 W	l²t	1 A ² ·s
Memory Work memory 256 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 Yes; Guaranteed by MMC (maintenance-free) • without battery Yes; Program and data CPU processing times for bit operations, typ. 0.05 μs	Power loss	
Work memory integrated expandable No Load memory Plug-in (MMC) Plug-in (MMC), max. Data management on MMC (after last programming), min. Backup present present very guaranteed by MMC (maintenance-free) very program and data CPU processing times for bit operations, typ. 256 kbyte No Yes Guaranteed No Yes Substituting the substitution that substituting the substituting the substituting the substitution that substituting the substitution that substituting the substitution that substitution the substitution the substitution that substitution the substitution that substitution the substitution that substitution the substitution that subs	Power loss, typ.	4.5 W
 integrated expandable No Load memory Plug-in (MMC) Plug-in (MMC), max. Plug-in (MMC), max. Data management on MMC (after last programming), min. Backup present without battery Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data CPU processing times for bit operations, typ. 0.05 μs 	Memory	
 expandable Load memory Plug-in (MMC) Plug-in (MMC), max. Data management on MMC (after last programming), min. Backup present without battery Program and data CPU processing times for bit operations, typ. No Yes Suaranteed by MMC (maintenance-free) Yes; Program and data CPU processing times 0.05 μs 	Work memory	
Load memory	• integrated	256 kbyte
 Plug-in (MMC) Plug-in (MMC), max. Data management on MMC (after last programming), min. Backup present without battery Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data CPU processing times for bit operations, typ. O.05 µs 	expandable	No
 Plug-in (MMC), max. Data management on MMC (after last programming), min. Backup present without battery Percent Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data CPU processing times for bit operations, typ. 0.05 µs 	Load memory	
 Data management on MMC (after last programming), min. Backup present without battery Program and data CPU processing times for bit operations, typ. 10 y Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data 	Plug-in (MMC)	Yes
programming), min. Backup ● present ● without battery CPU processing times for bit operations, typ. Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data 0.05 µs	Plug-in (MMC), max.	8 Mbyte
 present without battery CPU processing times for bit operations, typ. Yes; Guaranteed by MMC (maintenance-free) Yes; Program and data 0.05 μs 		10 y
 without battery CPU processing times for bit operations, typ. 0.05 μs 	Backup	
CPU processing times for bit operations, typ. 0.05 μs	• present	Yes; Guaranteed by MMC (maintenance-free)
for bit operations, typ. 0.05 µs	without battery	Yes; Program and data
	CPU processing times	
for word operations, typ. 0.09 µs	for bit operations, typ.	0.05 μs
	for word operations, typ.	0.09 µs

for fixed point arithmetic, typ.	0.12 μs
for floating point arithmetic, typ.	0.45 μs
CPU-blocks	
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.	64 kbyte
FB	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
Number, max.	see instruction list
• Size, max.	64 kbyte
 Number of free cycle OBs 	1; OB 1
 Number of time alarm OBs 	1; OB 10
 Number of delay alarm OBs 	2; OB 20, 21
 Number of cyclic interrupt OBs 	4; OB 32, 33, 34, 35
 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 	5; OB 80, 82, 85, 86, 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	
• 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	
• present	Yes

Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	, , , , , , , , , , , , , , , , , , , ,
Retentive data area (incl. timers, counters, flags), max.	128 kbyte
Flag	
• Size, max.	2 048 byte
Retentivity available	Yes; MB 0 to MB 2 047
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	c, monte, syste
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	2 048 byte
Outputs	2 048 byte
of which distributed	2 0 10 byto
— Inputs	2 048 byte
— Outputs	2 048 byte
Process image	2 040 byte
• Inputs	2 048 byte
Outputs	2 048 byte
Inputs, adjustable Outputs, adjustable	2 048 byte
Outputs, adjustable	2 048 byte
• Inputs, default	128 byte
Outputs, default	128 byte
Subprocess images	
Number of subprocess images, max.	1
Digital channels	40.004
• Inputs	16 384
— of which central	1 024
• Outputs	16 384
— of which central	1 024
Analog channels	
• Inputs	1 024
— of which central	256
Outputs	1 024
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
• integrated	1
• via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	10
Rack	
• Racks, max.	4
 Modules per rack, max. 	8
Time of day	
Clock	
Hardware clock (real-time)	Yes
• retentive and synchronizable	Yes
Backup time	6 wk; At 40 °C ambient temperature
Deviation per day, max.	10 s; Typ.: 2 s
Behavior of the clock following POWER-ON	Clock continues running after POWER OFF
2 20.00.00 of the order of the order	The second secon

 Behavior of the clock following expiry of backup period 	Clock continues to run with the time at which the power failure occurred
Operating hours counter	
Number	1
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1 h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	
• supported	Yes
• to MPI, master	Yes
• to MPI, slave	Yes
• to DP, master	Yes; With DP slave only slave clock
• to DP, slave	Yes
• in AS, master	Yes
• in AS, slave	No
Digital inputs	
Number of digital inputs	0
Digital outputs	
Number of digital outputs	0
Analog inputs	0
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	2; MPI and PROFIBUS DP
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	No
	No No
Isolated	No Yes
Isolated Interface types	
Isolated Interface types • RS 485	Yes
Isolated Interface types RS 485 Output current of the interface, max.	Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols	Yes 200 mA
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI	Yes 200 mA Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave	Yes 200 mA Yes No
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master	Yes 200 mA Yes No No
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI	Yes 200 mA Yes No No
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection	Yes 200 mA Yes No No No
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max.	Yes 200 mA Yes No No No
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication	Yes 200 mA Yes No No No No No
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services	Yes 200 mA Yes No No No No No Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing	Yes 200 mA Yes No No No No Yes Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication	Yes 200 mA Yes No No No No Yes Yes Yes Yes Yes Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication	Yes 200 mA Yes No No No No 187.5 kbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client	Yes 200 mA Yes No No No No Yes Yes Yes Yes Yes Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server	Yes 200 mA Yes No No No No 187.5 kbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server	Yes 200 mA Yes No No No No 187.5 kbit/s Yes Yes Yes Yes Yes Yes Yes Yes; Only server, configured on one side No Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server 2. Interface Interface type	Yes 200 mA Yes No No No No 187.5 kbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication R7 basic communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server 2. Interface Interface type Isolated	Yes 200 mA Yes No No No No 187.5 kbit/s Yes Yes Yes Yes Yes Yes Yes Yes; Only server, configured on one side No Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server 2. Interface Interface type Isolated Interface types	Yes 200 mA Yes No No No 187.5 kbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server 2. Interface Interface type Isolated Interface types RS 485	Yes 200 mA Yes No No No No 187.5 kbit/s Yes Yes Yes Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max.	Yes 200 mA Yes No No No 187.5 kbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max. Protocols	Yes 200 mA Yes No No No No 187.5 kbit/s Yes Yes Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes 200 mA
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server 2. Interface Interface type Isolated Interface types RS 485 Output current of the interface, max.	Yes 200 mA Yes No No No No 187.5 kbit/s Yes Yes Yes Yes Yes Yes Yes Yes; Only server, configured on one side No Yes Integrated RS 485 interface Yes Yes

PROFIBUS DP slave	Yes
Point-to-point connection	No
PROFIBUS DP master	
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124; Per station
Services	,
— PG/OP communication	Yes
— Routing	Yes
Global data communication	No
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
S7 communication, as client	No
— S7 communication, as server	Yes
— Equidistance	Yes
Isochronous mode	Yes; OB 61
— SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
Activation/deactivation of DF slaves Number of DP slaves that can be	8
simultaneously activated/deactivated, max.	0
— DPV1	Yes
Address area	
— Inputs, max.	2 048 byte
— Outputs, max.	2 048 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	Z++ byto
• GSD file	The latest GSD file is available at: http://www.siemens.com/profibus-gsd
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	02 byte
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
Global data communication	No
S7 basic communication	No
— S7 communication	Yes; Only server, configured on one side
S7 communication S7 communication, as client	No
— S7 communication, as server	Yes
Direct data exchange (slave-to-slave)	Yes
communication)	Tes
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
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, max. Number of GD packets, transmitter, max.	8
Number of GD packets, transmitter, max. Number of GD packets, receiver, max.	8
 Size of GD packets, max. 	22 byte
 Size of GD packets, max. Size of GD packet (of which consistent), max. 	22 byte
S7 basic communication	LE Dyllo
	Yes
• supported	100

a Llear data par joh, may	76 buto
User data per job, max. User data per job (of which consistent) max.	76 byte 76 bytes (with V. SEND or V. BCV): 64 bytes (with V. BLIT or
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	
• supported	Yes; via CP and loadable FC
Number of connections	
overall	16
 usable for PG communication 	15
 reserved for PG communication 	1
 adjustable for PG communication, min. 	1
 adjustable for PG communication, max. 	15
 usable for OP communication 	15
 reserved for OP communication 	1
 adjustable for OP communication, min. 	1
adjustable for OP communication, max.	15
usable for S7 basic communication	12
 reserved for S7 basic communication 	0
 adjustable for S7 basic communication, min. 	0
 adjustable for S7 basic communication, max. 	12
S7 message functions	
Number of login stations for message functions, max.	16; Depending on the configured connections for PG/OP and S7 basic
	communication
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	300
Test commissioning functions	
Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
Status/control	
 Status/control variable 	Yes
 Variables 	Inputs, outputs, memory bits, DB, times, counters
 Number of variables, max. 	30
of which status variables, max.	30
— of which control variables, max.	14
Forcing	
Forcing	Yes
 Forcing, variables 	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	
• present	Yes
 Number of entries, max. 	500
— adjustable	No
of which powerfail-proof	
	100; Only the last 100 entries are retained
 Number of entries readable in RUN, max. 	100; Only the last 100 entries are retained
Number of entries readable in RUN, max.— adjustable	100; Only the last 100 entries are retained Yes; From 10 to 499
	·
— adjustable	Yes; From 10 to 499
— adjustable — preset	Yes; From 10 to 499
— adjustable — preset Service data	Yes; From 10 to 499
adjustable preset Service data • can be read out Ambient conditions	Yes; From 10 to 499
 — adjustable — preset Service data • can be read out 	Yes; From 10 to 499

Configuration	
Configuration software	
• STEP 7	Yes; V5.2 SP1 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
 Block encryption 	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	290 g