SIEMENS

Data sheet

6ES7214-2AS23-0XB0

SIMATIC S7-200, CPU 224XPSI COMPACT UNIT, DC POWER SUPPLY 14DI DC/10DO DC (M), 2AI, 1AO 12/16 KB CODE/10 KB DATA, 2 PPI/FREEPORT PORTS



Figure similar

Supply voltage		
Rated value (DC)		
• 24 V DC	Yes	
Load voltage L+		
Rated value (DC)	24 V	
 permissible range, lower limit (DC) 	20.4 V	
• permissible range, upper limit (DC)	28.8 V	
Input current		
Inrush current, max.	12 A; at 28.8 V	
from supply voltage L+, max.	900 mA; 120 mA to 900 mA, output current for expansion modules	
	(5 V DC) 660 mA	
Encoder supply		
24 V encoder supply		
• 24 V	Yes; permissible range: 15.4 to 28.8 V	
Short-circuit protection	Yes; electronic at 280 mA	
 Output current, max. 	280 mA	

Memory	
Number of memory modules (optional)	1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files
Work memory	
• integrated (for program)	16 kbyte; 12 KB with active run-time edit
• integrated (for data)	10 kbyte
Backup	
● present	Yes; Program: Entire program maintenance-free on integral EEPROM, programmable via CPU; data: Entire DB 1 loaded from PG/PC maintenance-free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high-performance capacitor; optional battery for long-term buffering
Battery	
Backup battery	
Backup time, max.	100 h; (min. 70 h at 40 °C); 200 days (typ.) with optional battery module
CPU processing times	
for bit operations, max.	0.22 μs
Counters, timers and their retentivity	
S7 counter	
• Number	256
of which retentive with battery	
— can be set	Yes; via high-performance capacitor or battery
— lower limit	1
— upper limit	256
Counting range	
— lower limit	0
— upper limit	32 767
S7 times	
Number	256
of which retentive with battery	
— adjustable	Yes; via high-performance capacitor or battery
— upper limit	64
Time range	
— lower limit	1 ms
— upper limit	54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min
Data areas and their retentivity	
Flag	
Number, max.	32 byte
Retentivity available	Yes; M 0.0 to M 31.7

+ of which retentive without battery 0 to 112 in EEPROM, adjustable Hardware configuration Number of expansion units, max. 7; Only expansion modules of the S7-22x series can be used. Due to the fimited output current, the use of expansion modules may be limited. connectable programming devices/PCs SIMATIC PG/PC, standard PC Expansion modules • Analog inputs/outputs, max. 38; 2 onboard inputs and 1 output, also max. 28 inputs and 7 outputs (EM) or max. 0 inputs and 14 outputs (EM) • Digital inputs/outputs, max. 62; AS-Interface A/B slaves (CP 243-2) Digital inputs Number of digital inputs 14 Source/sink input Yes; optionally, per group • Rated value (DC) 24 V • for signal "0" 07 to 5V; 0V to 1V (I0.3 to I0.5) input delay (for rated value of input voltage) for standard inputs — parameter/zable Yes; all — at "0" to "1", max. 12.8 ms for interrupt inputs — parameter/zable Yes; I0.0 to I0.3 for counter/technological functions — parameter/zable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length • shielded, max. 500 m; Standard inputs 500 m, high-speed counters: 50 m Switching capacity of the outputs • with resistive load, max. 0.75 A • on lamp load, max. 0.75 A Output voltage	of which retentive with battery	0 to 255, via high-performance capacitor or battery, adjustable
Number of expansion units, max. 7; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited. SIMATIC PG/PC, standard PC Expansion modules • Analog inputs/outputs, max. • Analog inputs/outputs, max. • Digital inputs/outputs, max. • Digital inputs/outputs, max. • As-Interface A/B slaves (CP 243-2) Digital inputs 14	of which retentive without battery	0 to 112 in EEPROM, adjustable
Number of expansion units, max. 7; Only expansion modules of the S7-22x series can be used. Due to the limited output current, the use of expansion modules may be limited. SIMATIC PG/PC, standard PC Expansion modules • Analog inputs/outputs, max. • Analog inputs/outputs, max. • Digital inputs/outputs, max. • Digital inputs/outputs, max. • As-Interface A/B slaves (CP 243-2) Digital inputs 14	Hardware configuration	
to the limited output current, the use of expansion modules may be limited. connectable programming devices/PCs Expansion modules • Analog inputs/outputs, max. • Digital inputs/outputs, max. • Digital inputs/outputs, max. • AS-Interface inputs/outputs, max. • Cay as a state value (PC)	<u> </u>	7; Only expansion modules of the S7-22x series can be used. Due
Expansion modules • Analog inputs/outputs, max. • Digital inputs/outputs, max. • Digital inputs/outputs, max. • AS-Interface A'B slaves (CP 243-2) Digital inputs Number of digital inputs 14 Source/sink input Yes; optionally, per group Input voltage • Rated value (DC) • for signal "0" • for signal "1" min. 15 V; min. 4 V (I 0.3 to I 0.5) Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for counter/fechnological functions — parameterizable • Sheided, max. • unshielded, max. • unshielded, max. • Sou m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signals Digital outputs Number of digital outputs • With resistive load, max. • on lamp load, max. • on lamp load, max. • on lamp load, max. • on lamp load, max. • on lamp load, max. • on lamp load, max. • on lamp load, max. • on lamp load, max. • on lamp load, max. • on lamp load, max. • on lamp load, max. • O.75 A • O. To Max inputs and 14 outputs and 15 outputs and 14 outputs and 15 outputs and 15 outputs and 10 outputs and 1	,	to the limited output current, the use of expansion modules may
Analog inputs/outputs, max. Digital inputs/outputs, max. AS-Interface inputs/outputs, max. AS-Interface inputs/outputs, max. AS-Interface inputs/outputs, max. AS-Interface inputs/outputs, max. Bigital inputs Digital inputs Number of digital inputs As-Interface A/B slaves (CP 243-2) Digital inputs Number of digital inputs 14 Source/sink input Yes; optionally, per group Input voltage Rated value (DC) for signal "0" Ov to 5V; OV to 1V (I0.3 to I0.5) min. 15 V; min. 4 V (I 0.3 to I0.5) Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", max. — at "0" to "1", max. 12.8 ms for interrupt inputs — parameterizable Yes; I 0.0 to I 0.3 for counter/technological functions — parameterizable Ves; (E 0.0 to E 1.5) up to 200 kHz Cable length • shelded, max. • unshielded, max. 10; Transistor current sinking No; to be provided externally Limitation of inductive shutdown voltage to with resistive load, max. • on lamp load, max. 183, 2 onboard inputs and 14 outputs (IEM) 62; AS-Interface A/B slaves (CP 243-2) 168; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 148; max. 9 inputs and 74 outputs (CP 243-2) 149; max. 9 inputs and 74 outputs (CP 243-2) 140; max. 9 inputs and 74 outputs (CP 243-2) 140; max. 9 inputs and 74 outputs (CP 243-2) 140; max. 9 input	connectable programming devices/PCs	SIMATIC PG/PC, standard PC
outputs (EM) or max. 0 inputs and 14 outputs (EM) • Digital inputs/outputs, max. • AS-Interface inputs/outputs, max. • AS-Interface inputs/outputs, max. 62; AS-Interface A/B slaves (CP 243-2) Digital inputs Number of digital inputs 14 Source/sink input Yes; optionally, per group Input voltage • Rated value (DC) • for signal "0" • OV to 5V; OV to 1V (I0.3 to I0.5) • for signal "1" • for signal "1", typ. • for signal "1", typ. 2.5 mA; 8 mA for I0.3 to I0.5 Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", max. 12.8 ms for interrupt inputs — parameterizable — parameterizable Yes; I 0.0 to I 0.3 for counter/technological functions — parameterizable • shielded, max. • unshielded, max. • unshielded, max. • unshielded, max. 10; Transistor current sinking No; to be provided externally Limitation of inductive shutdown voltage to with resistive load, max. • with resistive load, max. • with resistive load, max. • on lamp load, max. • OTE A 14 168; max. 94 inputs and 74 outputs (CPU + EM) 62; AS-Interface A/B slaves (CP 243-2) 168; max. 94 inputs and 74 outputs and 7	Expansion modules	
• AS-Interface inputs/outputs, max. Digital inputs 14	Analog inputs/outputs, max.	
Number of digital inputs Number of digital inputs 14 Source/sink input Pasted value (DC) • Rated value (DC) • for signal "0" • for signal "1" • for signal "1" • for signal "1", typ. Input current • for signal "1", typ. Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable — parameterizable — parameterizable — parameterizable — parameterizable — parameterizable — parameterizable — parameterizable — parameterizable — parameterizable — parameterizable — parameterizable — parameterizable	 Digital inputs/outputs, max. 	168; max. 94 inputs and 74 outputs (CPU + EM)
Number of digital inputs Source/sink input Yes; optionally, per group Rated value (DC) • for signal "0" • for signal "1" • for signal "1", typ. Input current • for signal "1", typ. 2.5 mA; 8 mA for 10.3 to 10.5 Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable Yes; 1 0.0 to 1 0.3 for counter/technological functions — parameterizable • shielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • shielded, max. • unshielded, max. •	 AS-Interface inputs/outputs, max. 	62; AS-Interface A/B slaves (CP 243-2)
Source/sink input Input voltage Rated value (DC) for signal "0" for signal "1" min. 15 V; min. 4 V (I 0.3 to I 0.5) Input delay (for rated value of input voltage) for standard inputs - parameterizable - at "0" to "1", max. for interrupt inputs - parameterizable - parameterizable yes; I 0.0 to I 0.3 for counter/technological functions - parameterizable yes; (E 0.0 to E 1.5) up to 200 kHz Cable length shielded, max. unshielded, max. 500 m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signals Digital outputs Number of digital outputs Input delay (for rate value of input voltage) Yes; all 0.2 ms 12.8 ms For interrupt inputs Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length Soo m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signals Digital outputs Number of digital outputs Short-circuit protection Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs with resistive load, max. 0.75 A on lamp load, max. 5 W	Digital inputs	
Input voltage Rated value (DC) for signal "0" for signal "1" min. 15 V; min. 4 V (I 0.3 to I 0.5) Input current for signal "1", typ. 2.5 mA; 8 mA for I0.3 to I0.5 Input delay (for rated value of input voltage) for standard inputs - parameterizable - at "0" to "1", min at "0" to "1", max. for interrupt inputs - parameterizable yes; I 0.0 to I 0.3 for counter/technological functions - parameterizable yes; (E 0.0 to E 1.5) up to 200 kHz Cable length shielded, max. unshielded, max. 500 m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signals Digital outputs Number of digital outputs No; to be provided externally Limitation of inductive shutdown voltage to with resistive load, max. on lamp load, max. Sut to 10.5 V to 10.3 to 10.5 Ves; II 0.0 to I 0.3 Testing the substitute of 10.5 Testing the substitute of 10.5 Testing to 10.5 No; to be provided externally 10; Transistor current sinking Short-circuit protection No; to be provided externally Limit resistive load, max. on lamp load, max. Sut V		14
Rated value (DC) • for signal "0" • for signal "1" • for signal "1" input current • for signal "1", typ. 2.5 mA; 8 mA for 10.3 to 10.5 Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable — yes; 1 0.0 to 1 0.3 for counter/technological functions — parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length • shielded, max. • unshielded, max. Digital outputs Number of digital outputs No; to be provided externally Limitation of inductive shutdown voltage to with resistive load, max. • on lamp load, max. O 24 V OV to 5V; OV to 1V (10.3 to 10.5) Immin. 15 V; min. 4 V (1 0.3 to 10.5) No; to V (10.3 to 10.5) No to 10.3 to 10.5 No to 10.5 to 10.5 No to	Source/sink input	Yes; optionally, per group
for signal "0"	Input voltage	
• for signal "1" min. 15 V; min. 4 V (I 0.3 to I 0.5) Input current • for signal "1", typ. 2.5 mA; 8 mA for I0.3 to I0.5 Input delay (for rated value of input voltage) for standard inputs — parameterizable Yes; all — at "0" to "1", min. 0.2 ms — at "0" to "1", max. 12.8 ms for interrupt inputs — parameterizable Yes; I 0.0 to I 0.3 for counter/technological functions — parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length • shielded, max. 500 m; Standard input: 500 m, high-speed counters: 50 m • unshielded, max. 300 m; not for high-speed signals Digital outputs Number of digital outputs 10; Transistor current sinking Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs • with resistive load, max. 0.75 A • on lamp load, max. 5 W	Rated value (DC)	24 V
Input current • for signal "1", typ. Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable Yes; all — at "0" to "1", max. 12.8 ms for counter/technological functions — parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length • shielded, max. • unshielded, max. 10; Transistor current sinking Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to • with resistive load, max. • unampload, max. • unampload, max. • unampload, max. • on lamp load, max. • on lamp load, max. 5 W	● for signal "0"	0V to 5V; 0V to 1V (I0.3 to I0.5)
for signal "1", typ. Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable Yes; 1 0.0 to 1 0.3 for counter/technological functions — parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length • shielded, max. • unshielded, max. • unshielded, max. Digital outputs Number of digital outputs Nor, to be provided externally Limitation of inductive shutdown voltage to • with resistive load, max. • unampload, max. O.75 A • on lamp load, max. O.75 A • on lamp load, max. 5 W	• for signal "1"	min. 15 V; min. 4 V (I 0.3 to I 0.5)
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable — yes; 1 0.0 to 1 0.3 for counter/technological functions — parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length • shielded, max. • unshielded, max. • unshielded, max. 10; Transistor current sinking Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to • with resistive load, max. • unampload, max. 0.75 A • on lamp load, max. 5 W	Input current	
for standard inputs — parameterizable Yes; all — at "0" to "1", min. 0.2 ms — at "0" to "1", max. 12.8 ms for interrupt inputs — parameterizable Yes; I 0.0 to I 0.3 for counter/technological functions — parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length • shielded, max. 500 m; Standard input: 500 m, high-speed counters: 50 m • unshielded, max. 300 m; not for high-speed signals Digital outputs Number of digital outputs 10; Transistor current sinking Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs • with resistive load, max. 0.75 A • on lamp load, max. 5 W	● for signal "1", typ.	2.5 mA; 8 mA for I0.3 to I0.5
parameterizable Yes; all at "0" to "1", min. 0.2 ms at "0" to "1", max. 12.8 ms for interrupt inputs parameterizable Yes; 1 0.0 to 1 0.3 for counter/technological functions parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length shielded, max. 500 m; Standard input: 500 m, high-speed counters: 50 m unshielded, max. 300 m; not for high-speed signals Digital outputs Number of digital outputs 10; Transistor current sinking Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs with resistive load, max. 0.75 A on lamp load, max. 5 W	Input delay (for rated value of input voltage)	
- at "0" to "1", min. - at "0" to "1", max. 12.8 ms for interrupt inputs - parameterizable Yes; I 0.0 to I 0.3 for counter/technological functions - parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length • shielded, max. • unshielded, max. 10; Transistor current sinking Short-circuit protection Limitation of inductive shutdown voltage to with resistive load, max. • with resistive load, max. 0.75 A • on lamp load, max.	for standard inputs	
- at "0" to "1", max. - at "0" to "1", max. 12.8 ms for interrupt inputs - parameterizable Yes; I 0.0 to I 0.3 for counter/technological functions - parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length • shielded, max. • shielded, max. • unshielded, max. 10; Transistor current sinking Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to with resistive load, max. • with resistive load, max. • on lamp load, max. 12.8 ms 10.0 to I 0.3 Tes; (E 0.0 to E 1.5) up to 200 kHz 10.0 to E 1.5) up to 200 kHz	— parameterizable	Yes; all
for interrupt inputs — parameterizable Yes; 1 0.0 to 1 0.3 for counter/technological functions — parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length • shielded, max. • unshielded, max. 10; Transistor current sinking Short-circuit protection Limitation of inductive shutdown voltage to with resistive load, max. • unshielded, max. 10; Transistor current sinking No; to be provided externally Limitation of inductive shutdown voltage to with resistive load, max. • on lamp load, max. 5 W	— at "0" to "1", min.	0.2 ms
parameterizable Yes; 1 0.0 to 1 0.3 for counter/technological functions parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length ● shielded, max. ● unshielded, max. Digital outputs Number of digital outputs Number of digital outputs 10; Transistor current sinking Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to Switching capacity of the outputs ● with resistive load, max. ● on lamp load, max. ● on lamp load, max. Yes; (E 0.0 to E 1.5) up to 200 kHz Yes; (E 0.0 to E 1.5) up to 200 kHz 10; Transiator current sinking No; to be provided externally 1 W Switching capacity of the outputs ● with resistive load, max. ● on lamp load, max. 5 W	— at "0" to "1", max.	12.8 ms
for counter/technological functions — parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length • shielded, max. • unshielded, max. 500 m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signals Digital outputs Number of digital outputs 10; Transistor current sinking Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to Switching capacity of the outputs • with resistive load, max. • on lamp load, max. 500 m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signals 10; Transistor current sinking No; to be provided externally 1 W Switching capacity of the outputs	for interrupt inputs	
— parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz Cable length ● shielded, max. 500 m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signals Digital outputs Number of digital outputs 10; Transistor current sinking Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs ● with resistive load, max. 0.75 A ● on lamp load, max. 5 W	— parameterizable	Yes; I 0.0 to I 0.3
Cable length • shielded, max. • unshielded, max. 10; Transistor current sinking Short-circuit protection Limitation of inductive shutdown voltage to Switching capacity of the outputs • with resistive load, max. • on lamp load, max. 500 m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signals 10; Transistor current sinking No; to be provided externally 1 W Switching capacity of the outputs 500 m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signals	for counter/technological functions	
 shielded, max. unshielded, max. 300 m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signals Digital outputs Number of digital outputs Short-circuit protection Limitation of inductive shutdown voltage to Switching capacity of the outputs with resistive load, max. on lamp load, max. 5 W 	— parameterizable	Yes; (E 0.0 to E 1.5) up to 200 kHz
 ● unshielded, max. 300 m; not for high-speed signals Digital outputs Number of digital outputs Short-circuit protection Limitation of inductive shutdown voltage to Switching capacity of the outputs ● with resistive load, max. ● on lamp load, max. 5 W 	Cable length	
Digital outputs Number of digital outputs Short-circuit protection Limitation of inductive shutdown voltage to Switching capacity of the outputs • with resistive load, max. • on lamp load, max. 5 W	• shielded, max.	500 m; Standard input: 500 m, high-speed counters: 50 m
Number of digital outputs 10; Transistor current sinking No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs • with resistive load, max. • on lamp load, max. 5 W	• unshielded, max.	300 m; not for high-speed signals
Number of digital outputs 10; Transistor current sinking No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs • with resistive load, max. • on lamp load, max. 5 W	Digital outputs	
Limitation of inductive shutdown voltage to Switching capacity of the outputs • with resistive load, max. • on lamp load, max. 5 W		10; Transistor current sinking
Switching capacity of the outputs • with resistive load, max. • on lamp load, max. 5 W	Short-circuit protection	No; to be provided externally
 with resistive load, max. on lamp load, max. 5 W 	Limitation of inductive shutdown voltage to	1 W
• on lamp load, max. 5 W	Switching capacity of the outputs	
	• with resistive load, max.	0.75 A
Output voltage	● on lamp load, max.	5 W
	Output voltage	

• for signal "1", min.	1M -0.4 V
Output current	
● for signal "1" rated value	750 mA
for signal "0" residual current, max.	10 μΑ
Output delay with resistive load	
• "0" to "1", max. • "1" to "0", max.	15 μ s; of the standard outputs, max. (Q 0.2 to Q 1.1) 15 μ s; of the pulse outputs, max. (Q 0.0 to Q 0.1) 0.5 μ s 130 μ s; of the standard outputs, max. (Q 0.2 to Q 1.1) 130 μ s; of the pulse outputs, max. (Q 0.0 to Q 0.1) 1.5 μ s
Parallel switching of two outputs	are person carpains, mark (a crossed a cross) me pe
• for uprating	Yes
Switching frequency	
• of the pulse outputs, with resistive load, max.	100 kHz; Q0.0 to Q0.1
Total current of the outputs (per group)	100 KHZ, Q0.0 to Q0.1
all mounting positions	0.75 A
— up to 40 °C, max.	3.75 A
horizontal installation	
— up to 55 °C, max.	3.75 A
Relay outputs	
 Number of relay outputs, integrated 	0
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Analog inputs	
Number of analog potentiometers	2; Analog potentiometer; resolution 8 bit
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
permissible quiescent current (2-wire	1 mA
sensor), max.	
1 Interface	
1. Interface Interface type	Integrated RS 485 interface
Physics	RS 485
Functionality	
• MPI	Yes; As MPI slave for data exchange with MPI masters (S7-
• PPI	300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/CPU communication is possible in the MPI network with restrictions; transmission rates: 19.2/187.5 kbit/s Yes; with PPI protocol for program functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communication; transmission rates 9.6/19.2/187.5 kbit/s
	11 anomio 3011 fates 3.0/ 13.2/ 107.3 NDIVS

● serial data exchange	Yes; As freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbps; the PC/PPI cable can also be used as RS 232/RS 485 converter
MPI	
Transmission rate, min.	19.2 kbit/s
• Transmission rate, max.	187.5 kbit/s
2. Interface	
Interface type	Integrated RS 485 interface
Physics	RS 485
Functionality	
• MPI	Yes; As MPI slave for data exchange with MPI masters (S7-300/S7-400 CPUs, OPs, TDs, Push Button Panels); S7-200-internal CPU/CPU communication is possible in the MPI network with restrictions; transmission rates: 19.2/187.5 kbit/s
• PPI	Yes; with PPI protocol for program functions, HMI functions (TD 200, OP), S7-200-internal CPU/CPU communication; transmission rates 9.6/19.2/187.5 kbit/s
• serial data exchange	Yes; As freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 38.4 / 57.6 / 115.2 kbps; the PC/PPI cable can also be used as RS 232/RS 485 converter
Integrated Functions	
Integrated Functions Number of counters	6; High-speed counters (2 to 200 kHz and 4 to 30 kHz), 32 bits (incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.
	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting
Number of counters	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.
Number of counters Counting frequency (counter) max.	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc.
Number of counters Counting frequency (counter) max. Number of alarm inputs	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc. 200 kHz 4; 4 rising edges and/or 4 falling edges 2; High-speed outputs, 20 kHz, with interrupt option; pulse-width
Number of counters Counting frequency (counter) max. Number of alarm inputs Number of pulse outputs	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc. 200 kHz 4; 4 rising edges and/or 4 falling edges 2; High-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option
Number of counters Counting frequency (counter) max. Number of alarm inputs Number of pulse outputs Limit frequency (pulse)	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc. 200 kHz 4; 4 rising edges and/or 4 falling edges 2; High-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option
Number of counters Counting frequency (counter) max. Number of alarm inputs Number of pulse outputs Limit frequency (pulse) Potential separation	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc. 200 kHz 4; 4 rising edges and/or 4 falling edges 2; High-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option
Counting frequency (counter) max. Number of alarm inputs Number of pulse outputs Limit frequency (pulse) Potential separation Potential separation digital inputs	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc. 200 kHz 4; 4 rising edges and/or 4 falling edges 2; High-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option 20 kHz
Number of counters Counting frequency (counter) max. Number of alarm inputs Number of pulse outputs Limit frequency (pulse) Potential separation Potential separation digital inputs • between the channels	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc. 200 kHz 4; 4 rising edges and/or 4 falling edges 2; High-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option 20 kHz
Number of counters Counting frequency (counter) max. Number of alarm inputs Number of pulse outputs Limit frequency (pulse) Potential separation Potential separation digital inputs • between the channels • between the channels, in groups of	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc. 200 kHz 4; 4 rising edges and/or 4 falling edges 2; High-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option 20 kHz
Counting frequency (counter) max. Number of alarm inputs Number of pulse outputs Limit frequency (pulse) Potential separation Potential separation digital inputs • between the channels • between the channels, in groups of Potential separation digital outputs	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc. 200 kHz 4; 4 rising edges and/or 4 falling edges 2; High-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option 20 kHz Yes 6 and 8
Number of counters Counting frequency (counter) max. Number of alarm inputs Number of pulse outputs Limit frequency (pulse) Potential separation Potential separation digital inputs • between the channels • between the channels, in groups of Potential separation digital outputs • between the channels	(incl. sign), can be used as up/down counters or for connecting incremental encoders with 2 pulse trains offset by 90° (max. 1 to 100 kHz and 3 to 20 kHz (A/B counters)); parameterizable enable and reset input; interrupt facilities (incl. call of subroutine with any content) when the setpoint is reached; reversal in counting direction, etc. 200 kHz 4; 4 rising edges and/or 4 falling edges 2; High-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option 20 kHz Yes 6 and 8

Degree and class of protection	
Degree of protection acc. to EN 60529	
• IP20	Yes
Ambient conditions	
Environmental conditions	For further environmental conditions, see "Automation System S7-
	200, System Manual"
Ambient temperature during operation	
horizontal installation, min.	0 °C
 horizontal installation, max. 	55 °C
• vertical installation, min.	0 °C
• vertical installation, max.	45 °C
Air pressure acc. to IEC 60068-2-13	
permissible range, lower limit	860 hPa
permissible range, upper limit	1 080 hPa
Relative humidity	
Operation, min.	5 %
Operation, max.	95 %; RH class 2 in accordance with IEC 1131-2
Configuration	
Programming	
● Command set	Bit logic instructions, compare instructions, timer instructions, counter instructions, clock instructions, transmissions instructions, table instructions, logic instructions, shift and rotate instructions, conversion instructions, program control instructions, interrupt and communications instructions, logic stack instructions, integer maths, floating-point math instructions, numerical functions
Program processing	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)
Program organization	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer
 Number of subroutines, max. 	64
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
Know-how protection	
User program protection/password protection	Yes; 3-stage password protection
Connection method	
Plug-in I/O terminals	Yes
Dimensions	
Width	140 mm
Height	80 mm
Depth	62 mm

Weights
Weight, approx.

last modified:

03/16/2017