SIEMENS

Data sheet

6ES7212-1AB23-0XB0

SIMATIC S7-200, CPU 222 COMPACT UNIT, DC POWER SUPPLY 8 DI DC/6 DO DC 4 KB CODE/2 KB DATA, PROFIBUS DP EXTENDABLE



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.	10 A; at 28.8 V
from supply voltage L+, max.	500 mA; 85 mA to 500 mA, output current for expansion modules
	(5 V DC) 340 mA
Encoder supply	
24 V encoder supply	
• 24 V	Yes; permissible range: 15.4 to 28.8 V
 Short-circuit protection 	Yes; electronic at 600 mA
• Output current, max.	180 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) 	4 kbyte
 integrated (for data) 	2 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. 	50 h; (min. 8 h at 40 $^\circ\text{C}$); 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. 2; Only expansion modules of the 57-22x series can be used. Due to the timited 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. 10; max. 8 inputs and 2 outputs (EM) or max. 0 inputs and 4 outputs (EM) · Digital inputs/outputs, max. 78; max. 40 inputs and 38 outputs (CPU + EM) · Objital inputs/outputs, max. 78; max. 40 inputs and 38 outputs (CPU + EM) · Objital inputs/outputs, max. 78; max. 40 inputs and 38 outputs (CPU + EM) · Objital inputs/outputs, max. 78; max. 40 inputs and 38 outputs (CPU + EM) · Objital inputs Source/sink input Yes: optionally, per group Input voltage · Reted value (DC) 24 V · for signal *1* min. 15 V Input delay (for rated value of input voltage) for signal *1* min. 15 V Input delay (for rated value of input voltage) for signal *1* _ parameterizable _ parameterizable Yes; i 0.0 to 10.3 for counter/technological functions _ parameterizable Yes; (1.0. to 10.3 for counter/technological functions _ parameterizable Yes; (0.0 to 10.3 for counter/technological functions _ parameterizable Yes; (0.0 to 10.3 for counter/technological functions _ parameterizable Yes; (0.0 to 10.3 for information shielded, max. 300 m; not for high-speed counters: 50 m unshielder, max. 300 m; not for high-speed signals	 of which retentive with battery 	0 to 255, via high-performance capacitor or battery, adjustable
Number of expansion units, max. 2: 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. connectable programming devices/PCs SIMATIC PG/PC, standard PC Expansion modules 10: max. 8 inputs and 2 outputs (EM) or max. 0 inputs and 4 outputs (EM) • Analog inputs/outputs, max. 78; max. 40 inputs and 38 outputs (CPU + EM) • AS-Interface inputs/outputs, max. 62; AS-Interface A/B slaves (CP 243-2) Digital inputs 8 Source/sink input Yes; optionally, per group Input voltage • Rated value (DC) 24 V • for signal "1" min. 15 V Input delay (for rated value of input voltage) for signal "1", typ. for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for signal "1", min. - parameterizable Yes; all - at "0" to "1", min. 0.2 ms - parameterizable Yes; i 0.0 to 1 0.3 for conter/technological functions - - parameterizable Yes; i 0.0 to 1 0.3 for conter/technological functions - unshielded, max.<td> of which retentive without battery </td><td>0 to 112 in EEPROM, adjustable</td>	 of which retentive without battery 	0 to 112 in EEPROM, adjustable
Number of expansion units, max. 2: 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. connectable programming devices/PCs SIMATIC PG/PC, standard PC Expansion modules 10: max. 8 inputs and 2 outputs (EM) or max. 0 inputs and 4 outputs (EM) • Analog inputs/outputs, max. 78; max. 40 inputs and 38 outputs (CPU + EM) • AS-Interface inputs/outputs, max. 62; AS-Interface A/B slaves (CP 243-2) Digital inputs 8 Source/sink input Yes; optionally, per group Input voltage • Rated value (DC) 24 V • for signal "1" min. 15 V Input delay (for rated value of input voltage) for signal "1", typ. for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for signal "1", min. - parameterizable Yes; all - at "0" to "1", min. 0.2 ms - parameterizable Yes; i 0.0 to 1 0.3 for conter/technological functions - - parameterizable Yes; i 0.0 to 1 0.3 for conter/technological functions - unshielded, max.<td></td><td></td>		
to the limited output current, the use of expansion modules may be limited. connectable programming devices/PCs SIMATIC PC/PC, standard PC Expansion modules 10; max. 8 inputs and 2 outputs (EM) or max. 0 inputs and 4 outputs (EM) • Digital inputs/outputs, max. 78; max. 40 inputs and 38 outputs (CPU + EM) • As-Interface inputs/outputs, max. 62; AS-Interface A/B slaves (CP 243-2) Digital inputs 8 Source/sink input Yes: potionally, per group Input voltage - • Rated value (DC) 24 V • for signal "0" 0 to 5 V • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) - for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) - for interrupt 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; (E 0.0 to E 0.5) 30 kHz Cable length - - ushielded, max. 500 m; Standard input; 500 m, hig		2: Only expansion modules of the S7-22x series can be used. Due
Expansion modules • Analog inputs/outputs, max. 10; max. 8 inputs and 2 outputs (EM) or max. 0 inputs and 4 outputs (EM) • Digital inputs/outputs, max. 78; max. 40 inputs and 38 outputs (CPU + EM) • AS-Interface inputs/outputs, max. 62; AS-Interface A/B slaves (CP 243-2) Polatal inputs 8 Source/sink input Yes; optionally, per group Input voltage - • Rated value (DC) 24 V • for signal "0" 0 to 5 V • for signal "1" min. 15 V Input durated inputs 2.5 mA Input durate of input voltage) - for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) - for stadard inputs - - parameterizable Yes; all - at "0" to "1", max. 12.8 ms for interrupt inputs - - parameterizable Yes; (E 0.0 to E 0.5) 30 KHz Cable length - • shielded, max. 300 m; standard input: 500 m, high-speed counters; 50 m • unshielded, max. 300 m; not for high-speed signals Polatal outputs 6; Transistor Number of digital o		to the limited output current, the use of expansion modules may
Analog inputs/outputs, max. 10; max. 8 inputs and 2 outputs (EM) or max. 0 inputs and 4 outputs (EM) Digital inputs/outputs, max. 78; max. 40 inputs and 38 outputs (CPU + EM) 62; AS-Interface A/B slaves (CP 243-2) Digital inputs Mumber of digital inputs 8 Source/sink input P Rated value (DC) 24 V • for signal "1" • for signal "0" • for signal "1" • for signal "1", max. 12.8 ms for interrupt inputs - parameterizable • parameterizable Yes; 10.0 to 10.3 for counter/technological functions - parameterizable • shielded, max. 300 m; not for high-speed counters: 50 m 300 m; not for high-speed signals Piglial outputs Autor to inputs source sour	connectable programming devices/PCs	SIMATIC PG/PC, standard PC
outputs (EM) outputs (EM) • Digital inputs/outputs, max. 78; max. 40 inputs and 38 outputs (CPU + EM) • AS-Interface inputs/outputs, max. 62; AS-Interface A/B slaves (CP 243-2) Digital inputs 8 Number of digital inputs 8 Source/sink input Yes; optionally, per group Input soluta 70; max. 40 inputs • Rated value (DC) 24 V • for signal "0" 0 to 5 V • for signal "1" min. 15 V Input current 0 to 5 V • for rated value of input voltage) 78; all - parameterizable Yes; all - at "0" to "1", max. 12.8 ms for interrupt inputs - parameterizable - parameterizable Yes; 10.0 to 1 0.3 for counter/flechnological functions - parameterizable - parameterizable Yes; (E 0.0 to E 0.5) 30 kHz Cable length 500 m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signals Digital outputs 6; Transistor Sheided, max. 300 m; not for high-speed signals Digital outputs 6; Transistor Number of digital outputs 6; Transistor Sheided, max. 0.75 A • on lamp load, max. 5 W	Expansion modules	
• AS-Interface inputs/outputs, max. 62; AS-Interface A/B slaves (CP 243-2) Digital inputs 8 Number of digital inputs 8 Source/sink input Yes; optionally, per group Input voltage 24 V • Aated value (DC) 24 V • for signal "0" 0 to 5 V • for signal "1", typ. 2.5 rmA Input delay (for rated value of input voltage) for standard inputs • for signal "1", typ. 2.5 rmA Input delay (for rated value of input voltage) 7 es; all • for standard inputs - parameterizable - parameterizable Yes; all - at "0" to "1", min. 0.2 rms - at "0" to "1", max. 12.8 rms for interrupt inputs - parameterizable - parameterizable Yes; I 0.0 to I 0.3 for counter/technological functions - parameterizable - parameterizable Yes; I 0.0 to E 0.5) 30 kHz Cable length 500 m; Standard input: 500 m, high-speed counters: 50 m • unshielded, max. 300 m; not for high-speed signals Digital outputs 6; Transistor Number of digital outputs 6; Transistor	 Analog inputs/outputs, max. 	
Digital inputs 8 Number of digital inputs 8 Source/sink input Yes; optionally, per group Input voltage 24 V • Rated value (DC) 24 V • for signal "1" 0 to 5 V • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for standard inputs • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for standard inputs - parameterizable Yes; all - at "0" to "1", max. 12.8 ms for interrupt inputs - parameterizable - parameterizable Yes; 10.0 to 1 0.3 for counter/flechnological functions - parameterizable - parameterizable Yes; (E 0.0 to E 0.5) 30 kHz Cable length \$00 m; Standard input: 500 m, high-speed counters: 50 m • unshielded, max. \$00 m; not for high-speed signals Digital outputs 6; Transistor Number of digital outputs 6; Transistor Shori to be provided externally 1 m Limitation of inductive shutdown voltage to 1 W	 Digital inputs/outputs, max. 	78; max. 40 inputs and 38 outputs (CPU + EM)
Number of digital inputs 8 Source/sink input Yes; optionally, per group Input voltage 24 V • Rated value (DC) 24 V • for signal "0" 0 to 5 V • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for signal "1", typ. for standard inputs - parameterizable - parameterizable Yes; all - at "0" to "1", max. 12.8 ms for interrupt inputs - parameterizable - parameterizable Yes; 10.0 to 1 0.3 for counter/technological functions - parameterizable - parameterizable Yes; (E 0.0 to E 0.5) 30 kHz Cable length 500 m; Standard input: 500 m, high-speed counters: 50 m ogo m; not for high-speed signals soo m; not for high-speed signals Digital outputs 6; Transistor Number of digital outputs 6; Transistor Short-circuit protection 1W Limitation of inductive shutdown voltage to 1W Switching capacity of the outputs 0.75 A • on lamp load, max. 5W	 AS-Interface inputs/outputs, max. 	62; AS-Interface A/B slaves (CP 243-2)
Number of digital inputs 8 Source/sink input Yes; optionally, per group Input voltage 24 V • Rated value (DC) 24 V • for signal "0" 0 to 5 V • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for signal "1", typ. for standard inputs - parameterizable - parameterizable Yes; all - at "0" to "1", max. 12.8 ms for interrupt inputs - parameterizable - parameterizable Yes; 10.0 to 1 0.3 for counter/technological functions - parameterizable - parameterizable Yes; (E 0.0 to E 0.5) 30 kHz Cable length 500 m; Standard input: 500 m, high-speed counters: 50 m ogo m; not for high-speed signals soo m; not for high-speed signals Digital outputs 6; Transistor Number of digital outputs 6; Transistor Short-circuit protection 1W Limitation of inductive shutdown voltage to 1W Switching capacity of the outputs 0.75 A • on lamp load, max. 5W	Digital inputs	
Input voltage • Rated value (DC) 24 V • for signal "0" 0 to 5 V • for signal "1" min. 15 V Input current 2.5 mA • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for standard inputs - parameterizable Yes; all - at "0" to "1", max. 0.2 ms - at "0" to "1", max. 12.8 ms for counter/technological functions - - parameterizable Yes; 1 0.0 to 1 0.3 for counter/technological functions - - parameterizable Yes; (E 0.0 to E 0.5) 30 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 6; Transistor Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs 0.75 A • on lamp load, max. 5 W		8
• Rated value (DC) 24 V • for signal "0" 0 to 5 V • for signal "1" min. 15 V Input current 2.5 mA • for signal "1", typ. 2.5 mA Input delay (for rated value of input voltage) for standard inputs - parameterizable Yes; all - at "0" to "1", max. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - - parameterizable Yes; 10.0 to 1 0.3 for counter/technological functions - - parameterizable Yes; (E 0.0 to E 0.5) 30 kHz Cable length S00 m; Standard input: 500 m, high-speed counters: 50 m . unshielded, max. 300 m; not for high-speed signals Digital outputs 6; Transistor Number of digital outputs 6; Transistor Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs 0.75 A • on lamp load, max. 5 W	Source/sink input	Yes; optionally, per group
Intervent0 to 5 Vi for signal "1"min. 15 VInput current2.5 mAInput delay (for rated value of input voltage)for signal "1", typ.for standard inputs2.5 mA— parameterizableYes; all— at "0" to "1", min.0.2 ms— at "0" to "1", max.12.8 msfor interrupt inputs-— parameterizableYes; 1 0.0 to 1 0.3for counter/technological functions-— parameterizableYes; (E 0.0 to E 0.5) 30 kHzCable length500 m; Standard input: 500 m, high-speed counters: 50 m• shielded, max.500 m; Standard input: 500 m, high-speed counters: 50 mShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage to1 WSwitching capacity of the outputs0.75 A• on lamp load, max.5 W	Input voltage	
• for signal "1" min. 15 V Input current 2.5 mA • for signal "1", typ. 2.5 mA 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; 1 0.0 to 1 0.3 for counter/technological functions - - parameterizable Yes; (E 0.0 to E 0.5) 30 kHz Cable length 500 m; Standard input: 500 m, high-speed counters: 50 m • unshielded, max. 300 m; not for high-speed signals Digital outputs 6; Transistor Number of digital outputs 6; Transistor Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs 0.75 A • on lamp load, max. 5 W	Rated value (DC)	24 V
Input current 2.5 mA Input delay (for rated value of input voltage) for standard inputs	● for signal "0"	0 to 5 V
• for signal "1", typ. 2.5 mA 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; 10.0 to 1 0.3 for counter/technological functions - - parameterizable Yes; (E 0.0 to E 0.5) 30 kHz Cable length 500 m; Standard input: 500 m, high-speed counters: 50 m . unshielded, max. 500 m; ot for high-speed signals Digital outputs 6; Transistor Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs 0.75 A • on lamp load, max. 5 W	● for signal "1"	min. 15 V
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; 10.0 to 10.3 for counter/technological functions - parameterizable Yes; (E 0.0 to E 0.5) 30 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 6; Transistor 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. 5W	Input current	
for standard inputs	● for signal "1", typ.	2.5 mA
parameterizableYes; all at "0" to "1", min.0.2 ms at "0" to "1", max.12.8 msfor interrupt inputs parameterizableYes; 1 0.0 to 1 0.3for counter/technological functions parameterizableYes; (E 0.0 to E 0.5) 30 kHzCable length500 m; Standard input: 500 m, high-speed counters: 50 m• shielded, max.500 m; Ot n; Standard input: 500 m, high-speed counters: 50 m• unshielded, max.500 m; Standard input: 500 m, high-speed counters: 50 mDigital outputs6; TransistorNumber of digital outputs6; TransistorShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage to1 WSwitching capacity of the outputs0.75 A• on lamp load, max.5 W	Input delay (for rated value of input voltage)	
at "0" to "1", min.0.2 ms at "0" to "1", max.12.8 msfor interrupt inputs parameterizableYes; 1 0.0 to 1 0.3for counter/technological functions parameterizableYes; (E 0.0 to E 0.5) 30 kHzCable length• shielded, max.500 m; Standard input: 500 m, high-speed counters: 50 m• unshielded, max.300 m; not for high-speed signalsDigital outputs6; TransistorNumber of digital outputs6; TransistorShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage to1 WSwitching capacity of the outputs0.75 A• on lamp load, max.5 W	for standard inputs	
	— parameterizable	Yes; all
for interrupt inputs	— at "0" to "1", min.	0.2 ms
parameterizableYes; 1 0.0 to 1 0.3for counter/technological functions parameterizableYes; (E 0.0 to E 0.5) 30 kHzCable length• shielded, max.500 m; Standard input: 500 m, high-speed counters: 50 m• unshielded, max.300 m; not for high-speed signals• unshielded, max.6; TransistorNumber of digital outputs6; TransistorShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage to1 WSwitching capacity of the outputs0.75 A• with resistive load, max.5 W	— at "0" to "1", max.	12.8 ms
for counter/technological functions parameterizable Yes; (E 0.0 to E 0.5) 30 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 6; Transistor Number of digital outputs 6; Transistor Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs 0.75 A • with resistive load, max. 5 W	for interrupt inputs	
— parameterizableYes; (E 0.0 to E 0.5) 30 kHzCable length• shielded, max.500 m; Standard input: 500 m, high-speed counters: 50 m• unshielded, max.300 m; not for high-speed signalsDigital outputsNumber of digital outputs6; TransistorShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage to1 WSwitching capacity of the outputs0.75 A• with resistive load, max.5 W	— parameterizable	Yes; I 0.0 to I 0.3
Cable length• shielded, max.500 m; Standard input: 500 m, high-speed counters: 50 m 300 m; not for high-speed signalsDigital outputs300 m; not for high-speed signalsDigital outputs6; TransistorNumber of digital outputs6; TransistorShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage to1 WSwitching capacity of the outputs0.75 A• on lamp load, max.5 W	for counter/technological functions	
Cable length• shielded, max.500 m; Standard input: 500 m, high-speed counters: 50 m• unshielded, max.300 m; not for high-speed signalsDigital outputsNumber of digital outputs6; TransistorShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage to1 WSwitching capacity of the outputs0.75 A• on lamp load, max.5 W	— parameterizable	Yes; (E 0.0 to E 0.5) 30 kHz
 unshielded, max. 300 m; not for high-speed signals Digital outputs Number of digital outputs 6; Transistor Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs 0.75 A • on lamp load, max. 5 W		
• unshielded, max.300 m; not for high-speed signalsDigital outputs6; TransistorNumber of digital outputs6; TransistorShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage to1 WSwitching capacity of the outputs0.75 A• with resistive load, max.5 W	 shielded, max. 	500 m; Standard input: 500 m, high-speed counters: 50 m
Number of digital outputs 6; Transistor Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs 0.75 A • with resistive load, max. 5 W		300 m; not for high-speed signals
Number of digital outputs 6; Transistor Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs 0.75 A • with resistive load, max. 5 W	Digital outputs	
Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs 0.75 A • with resistive load, max. 5 W		6; Transistor
Limitation of inductive shutdown voltage to 1 W Switching capacity of the outputs 0.75 A • with resistive load, max. 0.75 A • on lamp load, max. 5 W		
Switching capacity of the outputs • with resistive load, max. • on lamp load, max. 5 W		
 with resistive load, max. on lamp load, max. 5 W 		
• on lamp load, max. 5 W		0.75 A
		5 W
	·	

● for signal "1", min.	20 V DC
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.	15 μ s; of the standard outputs, max. (Q0.2 to Q0.5) 15 μ s; of the pulse outputs, max. (Q0.0 to Q0.1) 2 μ s
• "1" to "0", max.	130 μ s; of the standard outputs, max. (Q0.2 to Q0.5) 100 μ s; of the pulse outputs, max. (Q0.0 to Q0.1) 10 μ s
Parallel switching of two outputs	
• for uprating	Yes
Switching frequency	
 of the pulse outputs, with resistive load, max. 	20 kHz; Q0.0 to Q0.1
Total current of the outputs (per group)	
all mounting positions	
— up to 40 °C, max.	4.5 A
horizontal installation	
— up to 55 °C, max.	4.5 A
Relay outputs	
 Number of relay outputs, integrated 	0
Cable length	
 shielded, max. 	500 m
• unshielded, max.	150 m
Analog inputs	4. An also a shart is made an ana al disa. O hit
Number of analog potentiometers	1; Analog potentiometer; resolution 8 bit
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
- permissible quiescent current (2-wire	1 mA
sensor), max.	
1. Interface	
Interface type	Integrated RS 485 interface
Physics	RS 485
Functionality	
• MPI • PPI	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 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
MPI	
Transmission rate, min.	19.2 kbit/s
• Transmission rate, max.	187.5 kbit/s
Integrated Functions	
Number of counters	4; High-speed counters (30 kHz each), 32 bits (incl. sign), can be used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 90° (max. 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.
Counting frequency (counter) max.	30 kHz
Number of alarm inputs	4; 4 rising edges and/or 4 falling edges
Number of pulse outputs	2; High-speed outputs, 20 kHz, with interrupt option; pulse-width and frequency modulation option
Limit frequency (pulse)	20 kHz
Potential separation	
Potential separation digital inputs	
 between the channels 	Yes
 between the channels, in groups of 	4
Potential separation digital outputs	
 between the channels 	Yes; Optocoupler
 between the channels, in groups of 	6
Permissible potential difference	
between different circuits	500 V DC between 24 V DC and 5 V DC
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	No
Dimensions	
Width	90 mm
Height	80 mm
Depth	62 mm
Neights	
Weight, approx.	270 g
last modified:	03/16/2017