## **SIEMENS**

Data sheet

6ES7214-2AD23-0XB0

SIMATIC S7-200, CPU 224XP COMPACT UNIT, DC POWER SUPPLY 14 DI DC/10 DO DC, 2 AI, 1 AO 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
<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V
<ul> <li>permissible range, upper limit (DC)</li> </ul>	28.8 V
Innat a support	
Input current	
Inrush current, max.	12 A; at 28.8 V
Inrush current, max. from supply voltage L+, max.	12 A; at 28.8 V 900 mA; 120 mA to 900 mA, output current for expansion modules
	900 mA; 120 mA to 900 mA, output current for expansion modules
from supply voltage L+, max.	900 mA; 120 mA to 900 mA, output current for expansion modules
from supply voltage L+, max.  Encoder supply	900 mA; 120 mA to 900 mA, output current for expansion modules
from supply voltage L+, max.  Encoder supply  24 V encoder supply	900 mA; 120 mA to 900 mA, output current for expansion modules (5 V DC) 660 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	
<ul><li>integrated (for program)</li></ul>	16 kbyte; 12 KB with active run-time edit
<ul><li>integrated (for data)</li></ul>	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	
<ul><li>Number</li></ul>	256
Retentivity	
— adjustable	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
Retentivity	
— 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    Hardware configuration   T; 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.	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.  • As-Interface 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.  • As-Interface 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 A/B slaves (CP 243-2)  Digital inputs  Number of digital inputs  14  Yes; optionally, per group  Input voltage  • Rated value (DC) • for signal "0" • OV to 5V; OV to 1V (10.3 to 10.5)  min. 15 V; min. 4 V (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.  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.  • outputs  Number of digital outputs  Number of digital outputs  Number of digital outputs  Number of digital outputs  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.  • 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.	<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"  • of 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 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.  12.8 ms  for interrupt inputs  — parameterizable  for counter/technological functions  — parameterizable  • Sheiteded, 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  Number of digital outputs  • with resistive load, max.  • unlamp load, max.  • on lamp load, max.	• ,	to the limited output current, the use of expansion modules may
Analog inputs/outputs, max.  Digital inputs/outputs, max.  AS-Interface inputs/outputs, max.  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 (10.3 to 10.5)  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 "4", max.  for interrupt inputs  — parameterizable — oshielded, 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  Switching capacity of the outputs  with resistive load, max.  on lamp load, max.  5 W	connectable programming devices/PCs	SIMATIC PG/PC, standard PC
Outputs (EM) or max. 0 inputs and 14 outputs (EM)  Objetal inputs/outputs, max.  AS-interface inputs/outputs, max.  62; AS-Interface A/B slaves (CP 243-2)  Digital inputs  Number of digital inputs  Source/sink input Yes; optionally, per group  Input voltage  Rated value (DC)  of or signal "0"  of or signal "1"  of or signal "1"  of or 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; 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  Old in Standard inputs  Digital outputs  Number of digital outputs  Number of digital outputs  No, to be provided externally  Limitation of inductive shutdown voltage to  Switching capacity of the outputs  with resistive load, max.  on lamp load, max.  Suitching capacity of the outputs  with resistive load, max.  outputs (CPU + EM)  62; AS-Interface A/B slaves (CP 243-2)  24 V  9 cyptional 74  Pyes; optionally, per group  10, 50	Expansion modules	
AS-Interface inputs/outputs, max.    AS-Interface A/B slaves (CP 243-2)	Analog inputs/outputs, max.	
Number of digital inputs  Number of digital inputs  Source/sink input  Yes; optionally, per group  Input voltage  Rated value (DC)  for signal "0"  Vto 5V; 0V to 1V (I0.3 to I0.5)  min. 15 V; min. 4 V (I 0.3 to I0.5)  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; all  - 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.  500 m; Standard input: 500 m, high-speed counters: 50 m  300 m; not for high-speed signals  Digital outputs  Number of digital outputs  Number of digital outputs  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.	<ul> <li>Digital inputs/outputs, max.</li> </ul>	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"  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 — yes; 1 0.0 to 1 0.3  for counter/technological functions — parameterizable  • shielded, max. • unshielded, max. • unshielded, max.  10	<ul> <li>AS-Interface inputs/outputs, max.</li> </ul>	62; AS-Interface A/B slaves (CP 243-2)
Source/sink input Input voltage  Rated value (DC) for signal "1" Vtype Signal "1" Vtype Signal "1", type Sig	Digital inputs	
Input voltage  Rated value (DC) for signal "0" Voto 5V; 0V to 1V (10.3 to 10.5) min. 15 V; min. 4 V (1 0.3 to 10.5)  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 parameterizable yes; all at "0" to "1", min. yes; all at "0" to "1", max. yes; 10.0 to 10.3  for counter/technological functions parameterizable Yes; (E 0.0 to E 1.5) up to 200 kHz  Cable length shielded, max. you my standard input: 500 m, high-speed counters: 50 m you mishielded, max. you mishielded, max. you mishielded, max. you mishielded, max. you mishielded externally  Limitation of inductive shutdown voltage to  with resistive load, max. on lamp load, max.  on lamp load, max.  on lamp load, max.  on lamp load, max.  on lamp load, max.  over the victor of victor of victor of the voltous  over the victor of victor		14
Rated value (DC)     • for signal "0"     • 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", min.     — at "0" to "1", max.  for interrupt inputs     — parameterizable     — yes; I 0.0 to I 0.3  for counter/technological functions     — parameterizable     • shielded, max.     • unshielded, max.  Digital outputs  Number of digital outputs  Number of digital outputs  • with resistive load, max.  • on lamp load, max.  • on lamp load, max.  • O.75 A  • on lamp load, max.  5 W	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  Number of digital outputs  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  9 yes; 1 0.0 to 1 0.3  for counter/technological functions — parameterizable  Ves; (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  • unshielded, max.  300 m; not for high-speed signals  Digital outputs  Number of digital outputs  Number of digital outputs  Short-circuit protection  Limitation of inductive shutdown voltage to  • with resistive load, max.  • unampload, max.  • unampload, 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     — 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  Number of digital outputs  No; to be provided externally  Limitation of inductive shutdown voltage to  No; to be provided externally  Limitation of inductive shutdown voltage to  with resistive load, max.  o n 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; 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.  • unshielded, max.  Digital outputs  Number of digital outputs  Number of digital outputs  Short-circuit protection No; to be provided externally  Limitation of inductive shutdown voltage to  • with resistive load, max.  • on lamp load, max.  5 W	Input current	
for standard inputs  — parameterizable — at "0" to "1", min. — at "0" to "1", max.  12.8 ms  for interrupt inputs — parameterizable — parameterizable — parameterizable — parameterizable — parameterizable — 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  Switching capacity of the outputs  • with resistive load, max.  • 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 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  Short-circuit protection  No; to be provided externally  Limitation of inductive shutdown voltage to  with resistive load, max.  • unlamp load, max.  0.75 A  • on lamp load, max.	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  Short-circuit protection No; to be provided externally  Limitation of inductive shutdown voltage to  with resistive load, max.  • unlamp 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.  • unshielded, max.  • unshielded, max.  Digital outputs  Number of digital outputs  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.  12.8 ms  10.0 to I 0.3  Yes; I 0.0 to I 0	— parameterizable	Yes; all
for interrupt inputs  — parameterizable  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  Short-circuit protection  Limitation of inductive shutdown voltage to  • with resistive load, max.  • unsplication of inactive load, max.  10; Transistor  Short-circuit protection  No; to be provided externally  1 W  Switching capacity of the outputs  • with resistive load, max.  10; Transistor  1 W  Switching capacity of the outputs  • with resistive load, max.  10; Transistor  1 W  Switching capacity of the outputs	— at "0" to "1", min.	0.2 ms
— 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 300 m; not for high-speed signals  Digital outputs  Number of digital outputs 10; 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. 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  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	for interrupt inputs	
— 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  Short-circuit protection  Limitation of inductive shutdown voltage to  with resistive 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  100 m; Standard input: 500 m, high-speed counters: 50 m  300 m; not for high-speed signals  10; Transistor  No; to be provided externally  1 W  Switching capacity of the outputs  • with resistive load, max.  10.75 A  5 W	— parameterizable	Yes; I 0.0 to I 0.3
Cable length  • shielded, max.  • unshielded, max.  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.  500 m; Standard input: 500 m, high-speed counters: 50 m  300 m; not for high-speed signals  10; Transistor  No; to be provided externally  1 W  Switching capacity of the outputs  • with resistive load, max.  5 W	for counter/technological functions	
<ul> <li>shielded, max.</li> <li>unshielded, max.</li> <li>300 m; Standard input: 500 m, high-speed counters: 50 m</li> <li>300 m; not for high-speed signals</li> <li>Digital outputs</li> <li>Number of digital outputs</li> <li>Short-circuit protection</li> <li>Limitation of inductive shutdown voltage to</li> <li>Switching capacity of the outputs</li> <li>with resistive load, max.</li> <li>on lamp load, max.</li> <li>5 W</li> </ul>	— parameterizable	Yes; (E 0.0 to E 1.5) up to 200 kHz
<ul> <li>unshielded, max.</li> <li>Digital outputs</li> <li>Number of digital outputs</li> <li>Short-circuit protection</li> <li>Limitation of inductive shutdown voltage to</li> <li>Switching capacity of the outputs</li> <li>with resistive load, max.</li> <li>on lamp load, max.</li> <li>300 m; not for high-speed signals</li> <li>No; to be provided externally</li> <li>1 W</li> <li>Switching capacity of the outputs</li> <li>5 W</li> </ul>	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  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.  • on lamp load, max.  5 W	• unshielded, max.	300 m; not for high-speed signals
Number of digital outputs  10; 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.  • 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
Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  5 W	Short-circuit protection	No; to be provided externally
<ul> <li>with resistive load, max.</li> <li>on lamp load, max.</li> <li>5 W</li> </ul>	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.	L+ (-0.4 V (5 V / 20.4 V for A 0.0 to A 0.4; 20.4 V A 0.5 to A1.1))
Output current	
for signal "1" rated value	750 mA
• for signal "0" residual current, max.	10 μΑ
Output delay with resistive load	
<ul><li>"0" to "1", max.</li><li>"1" to "0", max.</li></ul>	15 $\mu$ s; of the standard outputs, max. (Q 0.2 to Q 1.1) 15 $\mu$ s; of the pulse outputs, max. (Q 0.0 to Q 0.1) 0.5 $\mu$ s 130 $\mu$ s; of the standard outputs, max. (Q 0.2 to Q 1.1) 130 $\mu$ s; of the pulse outputs, max. (Q 0.0 to Q 0.1) 1.5 $\mu$ s
Parallel switching of two outputs	(3.2.2.2.4)
• 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)	, , , , , , , , , , , , , , , , , , , ,
all mounting positions	
— up to 40 °C, max.	3.75 A
horizontal installation	6.167.
	3.75 A
— up to 55 °C, max.	3.73 A
Relay outputs	0
Number of relay outputs, integrated	0
Cable length	F00
• 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
<ul> <li>permissible quiescent current (2-wire</li> </ul>	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
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	
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.
Counting frequency (counter) max.	200 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	6 and 8
Potential separation digital outputs	
between the channels	Yes; Optocoupler
• between the channels, in groups of	5
Permissible potential difference	500 V DO 1 1 04 V DO 15 V DO
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	
Ambient temperature during operation	
<ul> <li>horizontal installation, min.</li> </ul>	0 °C
<ul><li>horizontal installation, max.</li></ul>	55 °C
<ul> <li>vertical installation, min.</li> </ul>	0 °C
<ul><li>vertical installation, max.</li></ul>	45 °C
Air pressure acc. to IEC 60068-2-13	
• permissible range, lower limit	860 hPa
<ul> <li>permissible range, upper limit</li> </ul>	1 080 hPa
Relative humidity	
Operation, min.	5 %
Operation, max.	95 %; RH class 2 in accordance with IEC 1131-2
Configuration	
Programming	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
<ul><li>Program processing</li></ul>	free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms)
<ul> <li>Program organization</li> </ul>	1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer
<ul> <li>Number of subroutines, max.</li> </ul>	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.	390 g

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