## **SIEMENS**

## Data sheet

6ES7212-1AB22-0XB0

\*\*\* SPARE PART\*\*\* 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
<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V
<ul><li>permissible range, upper limit (DC)</li></ul>	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 • Short-circuit protection • Output current, max. Encoder supply Yes; permissible range: 15.4 to 28.8 V Yes; electronic at 600 mA

Memory	
Number of memory modules (optional)	1; pluggable memory module, content identical with integral EEPROM
Work memory	
• integrated (for program)	4 kbyte
<ul><li>integrated (for data)</li></ul>	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 °C); 200 days (typ.) with optional battery module
CPU processing times	
for bit operations, max.	0.37 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	65
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
<ul> <li>Retentivity available</li> </ul>	Yes; M 0.0 to M 31.7

+ of which retentive without battery  Hardware configuration  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  Expansion modules  • Analog inputs/outputs, max.  • Digital inputs/outputs, max.  • Digital inputs/outputs, max.  • As-Interface inputs/outputs, max.  • As-Interface inputs/outputs, max.  • As-Interface inputs/outputs, max.  Digital inputs  Number of digital inputs  8  Source/sink input  Yes; optionally, per group  Input voltage  • Rated value (DC) • for signal "1"  put delay (for rated value of input voltage)  for standard inputs  — parameterizable — at "0" to "1", min. — at "0" to "1", min. — at "0" to "1", max.  for interrupt inputs  — parameterizable  — parameterizable  Ves; (E 0.0 to E 0.5) 30 kHz  Cable length  • Shelded, max.  • unshielded, max.  500 m; Standard inputs  SiMATIC PG/PC, standard PC  Simatic PG/PC, standard inputs Simatic Parameterizable  Parameterizable  Yes; all  Q 2 ms  — at "0" to "1", min. — at "0" to "1", max.  12.8 ms  for interrupt inputs  — parameterizable  Yes; (E 0.0 to E 0.5) 30 kHz  Cable length  Ves; (E 0.0 to E 0.5) 30 kHz  Cable length  Simited.  Simited	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  Expansion modules  • Analog inputs/outputs, max.  • As-Interface inputs/outputs, max.  • Digital inputs/outputs, max.  • As-Interface slaves (CP 243-2)  Digital inputs  Number of digital inputs  Source/sink input  Yes; optionally, per group  Input voltage  • Rated value (DC) • for signal "1"  min. 15 V  Input current  • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable — at "0" to "1", max.  for interrupt inputs  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technol	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  Expansion modules  • Analog inputs/outputs, max.  • As-Interface inputs/outputs, max.  • Digital inputs/outputs, max.  • As-Interface slaves (CP 243-2)  Digital inputs  Number of digital inputs  Source/sink input  Yes; optionally, per group  Input voltage  • Rated value (DC) • for signal "1"  min. 15 V  Input current  • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable — at "0" to "1", max.  for interrupt inputs  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technological functions  — parameterizable  for counter/technol	Llaudi vana aantiini vation	
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.  • AS-Interface inputs/outputs, max.  • AS-Interface inputs/outputs, max.  • AS-Interface inputs/outputs, max.  • AS-Interface inputs/outputs, max.  Digital inputs  8  Source/sink input  • Rated value (DC) • for signal "1" • for standard inputs  — parameterizable — at "0" to "1", max.  for interrupt inputs  — parameterizable — parameterizabl		2; Only expansion modules of the S7-22x series can be used. Due
Expansion modules  • Analog inputs/outputs, max.  • Digital inputs/outputs, max.  • AS-Interface inputs/outputs, max.  Digital inputs  Number of digital inputs  Source/sink input  Input voltage  • Rated value (DC)  • for signal "0"  • Oto 5 V  • for signal "1", typ.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable — at "0" to "1", max. — at "0" to "1", max.  — at "0" to "1", max.  — parameterizable — parameterizable — yes; all — at "0" to "1", max.  For interrupt inputs  — parameterizable — parameterizable — yes; (E 0.0 to E 0.5) 30 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.	·	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 slaves (CP 243-2)  Digital inputs  Number of digital inputs  Source/sink input  Per signal "0"  For signal "0"  For signal "1", typ.  Input delay (for rated value of input voltage)  For standard inputs  — at "0" to "1", max.  For interrupt inputs  — parameterizable — at "0" to "1", max.  For counter/technological functions — parameterizable — parameteri	connectable programming devices/PCs	SIMATIC PG/PC, standard PC
Digital inputs/outputs, max. AS-Interface inputs/outputs, max.  AS-Interface inputs/outputs, max.  Digital inputs  Number of digital inputs  Source/sink input Number of digital inputs  Rated value (DC) For signal "0" Oto 5 V For signal "1" Input current For signal "1", typ.  A mA  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable — at "0" to "1", min. — at "0" to "1", max.  Digital inputs  Cable length  Source/sink input  Pes; I 0.0 to I 0.3  Digital outputs  Digital outputs  Nor, to be provided externally  Limitation of inductive shudown voltage to  With resistive load, max.  Outputs  Texture and as outputs (CPU + EM)  Remail and inputs and 38 outputs (CPU + EM)  A (Firmax. 40 inputs and 38 outputs and sa output a	Expansion modules	
AS-Interface inputs/outputs, max.  Digital inputs  Number of digital inputs  Source/sink input  Yes; optionally, per group  Input voltage  Rated value (DC) for signal "0" for signal "1" for signal "1"  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; I 0.0 to I 0.3  for counter/technological functions — parameterizable  Yes; (E 0.0 to E 0.5) 30 kHz  Cable length  • shielded, max.  • unshielded, max.  Digital outputs  Number of digital outputs  Number of digital outputs  • with resistive load, max.  • on lamp load, max.  • with resistive load, max.  • with resistive load, max.  • on lamp load, max.   31; AS-Interface slaves (CP 243-2)  8  4	Analog inputs/outputs, max.	
Digital inputs Number of digital inputs Source/sink input Yes; optionally, per group Input voltage  Rated value (DC) for signal "0" 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.  Input delay (for interrupt inputs  - parameterizable Yes; all - 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 0.5) 30 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 Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to with resistive load, max.  onlamp load, max.  5 W	<ul> <li>Digital inputs/outputs, max.</li> </ul>	78; max. 40 inputs and 38 outputs (CPU + EM)
Number of digital inputs  Source/sink input  Yes; optionally, per group  Input voltage  Rated value (DC) for signal "0" for signal "1" 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; all  — at "0" to "1", max.  for counter/technological functions — parameterizable  Yes; (E 0.0 to E 0.5) 30 kHz  Cable length  Shielded, max.  unshielded, max.  unshielded, max.  for interrupt inputs  Source/sink input  Source/sink input  Yes; all  Yes; all  Yes; 10.0 to 1 0.3  for counter/technological functions  yes; (E 0.0 to E 0.5) 30 kHz  Cable length  Source/sink input  Source/sink input  Source/sink input  Source/sink input  Source/sink input  Yes; all  Yes; all  O.2 ms  12.8 ms  for interrupt inputs  Yes; (E 0.0 to E 0.5) 30 kHz  Cable length  Source/sink input  Source/sink input Source/	<ul> <li>AS-Interface inputs/outputs, max.</li> </ul>	31; AS-Interface slaves (CP 243-2)
Number of digital inputs  Source/sink input  Yes; optionally, per group  Input voltage  Rated value (DC) for signal "0" for signal "1" 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; all  — at "0" to "1", max.  for counter/technological functions — parameterizable  Yes; (E 0.0 to E 0.5) 30 kHz  Cable length  Shielded, max.  unshielded, max.  unshielded, max.  for interrupt inputs  Source/sink input  Source/sink input  Yes; all  Yes; all  Yes; 10.0 to 1 0.3  for counter/technological functions  yes; (E 0.0 to E 0.5) 30 kHz  Cable length  Source/sink input  Source/sink input  Source/sink input  Source/sink input  Source/sink input  Yes; all  Yes; all  O.2 ms  12.8 ms  for interrupt inputs  Yes; (E 0.0 to E 0.5) 30 kHz  Cable length  Source/sink input  Source/sink input Source/	Digital inputs	
Input voltage  • 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; all — 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 0.5) 30 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  Short-circuit protection  Limitation of inductive shutdown voltage to  1 W  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  • on lamp load, max.  • on lamp load, max.		8
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  yes; all  at "0" to "1", max.  yes; I 0.0 to I 0.3  for counter/technological functions  parameterizable  yes; (E 0.0 to E 0.5) 30 kHz  Cable length  shielded, max.  unshielded, max.  sound my 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  No; to be provided externally  Limitation of inductive shutdown voltage to  with resistive load, max.  on lamp load, max.  0.75 A  on lamp load, max.  500  0 to 5 V  min. 15 V  max.  4 mA  4 mA  4 mA  4 mA  4 mA  502 ms  10.2 ms  12.8 ms	Source/sink input	Yes; optionally, per group
• 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.  Input delay (for rated value of input voltage)  for standard inputs  — parameterizable — at "0" to "1", min. — at "0" to "1", max.  I2.8 ms  for interrupt inputs — parameterizable Yes; I 0.0 to I 0.3  for counter/technological functions — parameterizable Yes; (E 0.0 to E 0.5) 30 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 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	Input voltage	
for signal "1" min. 15 V  Input current	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; 1 0.0 to 1 0.3  for counter/technological functions — parameterizable  • shielded, max.  • unshielded, max.  Digital outputs  Number of digital outputs  Short-circuit protection  Limitation of inductive shutdown voltage to  • with resistive load, max.  • with resistive load, max.  • on lamp load, max.  • on lamp load, max.  • on lamp load, max.  • dama  4 mA  6 no lamp load, max.  5 W	● for signal "0"	0 to 5 V
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; I 0.0 to I 0.3  for counter/technological functions  — parameterizable  Yes; (E 0.0 to E 0.5) 30 kHz  Cable length      • shielded, max.     • unshielded, max.  • unshielded, max.  100 m; Standard input: 500 m, high-speed counters: 50 m  Input to the parameter of digital outputs  Number of digital outputs  Short-circuit protection  Limitation of inductive shutdown voltage to  With resistive load, max.  • with resistive load, max.  • on lamp load, max.  5 W	• for signal "1"	min. 15 V
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 0.5) 30 kHz  Cable length  • shielded, max.  • unshielded, max.  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.  • 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 — yes; (E 0.0 to E 0.5) 30 kHz  Cable length  • shielded, max. • unshielded, max.  Digital outputs  Number of digital outputs  Number of digital outputs  Short-circuit protection  Limitation of inductive shutdown voltage to  • with resistive load, max. • on lamp load, max.  • on lamp load, max.  5 W	● for signal "1", typ.	4 mA
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 0.5) 30 kHz  Cable length  • shielded, max.  • unshielded, max.  100 m; Standard input: 500 m, high-speed counters: 50 m  100 m; Standard input: 500 m, high-speed signals  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.  • 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 0.5) 30 kHz  Cable length  • shielded, max.  • unshielded, max.  100 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  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 standard inputs	
- 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 0.5) 30 kHz  Cable length  • shielded, max.  • unshielded, max.  100 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  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  1 W  Switching capacity of the outputs	— parameterizable	Yes; all
for interrupt inputs  — parameterizable  for counter/technological functions  — parameterizable  Yes; (E 0.0 to E 0.5) 30 kHz  Cable length  • shielded, max.  • unshielded, max.  100 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.  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  100 m; to be provided externally	— 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 0.5) 30 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  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.	— 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.  • 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 0.5) 30 kHz  Yes; (E 0.0 to E 0.5) 30 kHz  Standard input: 500 m, high-speed counters: 50 m  500 m; Standard input: 500 m, high-speed counters: 50 m  6; Transistor  No; to be provided externally  1 W  Switching capacity of the outputs  • with resistive load, max.  • on lamp load, max.  5 W	for interrupt inputs	
— parameterizable  Yes; (E 0.0 to E 0.5) 30 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 0.5) 30 kHz  No tyour 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  6; 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>100 m; Standard input: 500 m, high-speed counters: 50 m</li> <li>unshielded, max.</li> <li>100 m; Not for high-speed signals</li> <li>100 m; Not for high-speed signals</li></ul>	— parameterizable	Yes; (E 0.0 to E 0.5) 30 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>6; Transistor</li> <li>No; to be provided externally</li> <li>1 W</li> <li>Switching capacity of the outputs</li> <li>on lamp load, max.</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  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.  • on lamp load, max.  5 W	• unshielded, max.	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  • 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		6; 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	
on any rough man	• with resistive load, max.	0.75 A
Output voltage	● on lamp load, max.	5 W
	Output voltage	

● 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 μs; of the standard outputs, max. (Q0.2 to Q0.5) 15 μs; of the pulse outputs, max. (Q0.0 to Q0.1) 2 μs
• "1" to "0", max.	100 $\mu s$ ; of the standard outputs, max. (Q0.2 to Q0.5) 100 $\mu s$ ; of the pulse outputs, max. (Q0.0 to Q0.1) 10 $\mu s$
Parallel switching of two outputs	
• for uprating	Yes
Switching frequency	
<ul> <li>of the pulse outputs, with resistive load, max.</li> </ul>	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
Cable length	
• shielded, max.	150 m
• unshielded, max.	150 m
Analog inputs	
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	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

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	
<ul><li>between the channels</li></ul>	Yes
<ul><li>between the channels, in groups of</li></ul>	4
Potential separation digital outputs	
• between the channels	Yes; Optocoupler
<ul> <li>between the channels, in groups of</li> </ul>	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
<ul> <li>horizontal installation, max.</li> </ul>	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
<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	No
Dimensions	
Width	90 mm
Height	80 mm
Depth	62 mm
Weights	
Weight, approx.	270 g
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