SIEMENS

Data sheet

6ES7211-0AA23-0XB0



Figuresimilar

 *** spare part *** SIMATIC S7-200, CPU 221 Compact unit, DC power supply 6 DI DC/4 DO DC 4 KB progr./2 KB data

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.	450 mA; 80 to 450 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			
Power loss				
Power loss, typ.	3 W			
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 °C); 200 days (typ.) with optional battery module			
CPU processing times	<u>_</u>			
for bit operations, max.	0.22 μs			
Counters, timers and their retentivity				
S7 counter	S7 counter			
Number	256			
Retentivity				
— adjustable	Yes; via high-performance capacitor or battery			
Counting range				

— lower limit	0
— upper limit	32 767
S7 times	<u>0</u> 2 i 0l
Number	256
Retentivity	230
— adjustable	Yes; via high-performance capacitor or battery
Time range	100, via high performance capacitor of battery
— 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
аррог пппс	54 min
Data areas and their retentivity	
Flag	
• Size, max.	32 byte
Retentivity available	Yes; M 0.0 to M 31.7
 of which retentive with battery 	0 to 255, via high-performance capacitor or battery, adjustable
 of which retentive without battery 	0 to 112 in EEPROM, adjustable
Hardware configuration	
connectable programming devices/PCs	SIMATIC PG/PC, standard PC
Digital inputs	
Number of digital inputs	6; Integrated
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 current	
• 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; I 0.0 to I 0.3
for 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	4; 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
Output voltage	
• for signal "1", min.	20 V DC
Output current	
• for signal "1" rated value	750 mA
• for signal "0" residual current, max.	0.1 mA
Output delay with resistive load	
• "0" to "1", max.	15 $\mu s;$ of the standard outputs, max. (Q0.2 to Q0.3) 15 $\mu s;$ of the pulse outputs, max. (Q0.0 to Q0.1) 2 μs
• "1" to "0", max.	130 $\mu s;$ of the standard outputs, max. (Q0.2 to Q0.3) 100 $\mu s;$ of the pulse outputs, max. (Q0.0 to Q0.1) 10 μs
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		
honcortal installation — up to 55°C, max. 8 Relay captate • Number of rolay outbuts • Number of rolay outbuts • Number of rolay outbuts • Unableded, max. • Unableded, max		3 Δ	
- up to 55 °C. max. Rolay outputs • Number of rolay outputs • Number of rolay outputs • Number of analog potentionelers • Up to the control of analog potentionelers • Number of analog potentionelers • 2-wire swarps • 1 mA			
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Interface Interface type Interface type Protocols • MPI • MPI • Yes; As MPI slave for data exchange with MPI masters (\$7-300/\$7-400 CPUs, OPs, TDs, Push Button Panels); \$7-200-Internal CPUCPU communication is possible in the MPI network with restrictions; transmission rates 19,2187.5 kbt/s • SPPI • PPI • Serial data exchange • Transmission rate, min, in 19,2 / 38,4 / 57,6 / 115,2 kbps; the PC/PPI cable can also be used as RS 23/RS 485 converter MPI • Transmission rate, min, in 19,2 / 38,4 / 57,6 / 115,2 kbps; the PC/PPI cable can also be used as RS 23/RS 485 converter • Number of counters • Number of counters • Counter • Number of counters • Counting frequency, max. 187.5 kbt/s • Counting frequency, max. 29 kt/2 (RS counters); parameterizable enable and reset injust interrupt facilists (nct. call of suprountine with any countine wit	Connectable encoders		
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Serial data exchange Serial data exchange with hird-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 134 / 157.6 / 115.2 kbps; the PC/PPI cable can also be used as RS 232/RS 485 converter MPI Transmission rate, min. Stransmission rate, min. Serial data exchange with hird-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 134 / 157.6 / 115.2 kbps; the PC/PPI cable can also be used as RS 232/RS 485 converter MPI Transmission rate, min. Serial data exchange Serial data exchange with hird-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 134 / 157.6 / 115.2 kbps; the PC/PPI cable can also be used as RS 232/RS 485 converter MPI Transmission rate, min. Serial data exchange with hird-party devices with ASCII protocol transfer rates: 1.2 / 2.4 / 4.8 / 18.5 kbl/s Integrated Functions Counter Sumber of counters: 4; High-speed counters (30 kHz each), 32 bit (incl. sign), can be used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 96 / (max. 20 kHz (A/B counters)), purple used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 96 / (max. 20 kHz (A/B counters)), purple used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 96 / (max. 20 kHz (A/B counters)), purple used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 96 / (max. 20 kHz (A/B counters)), purple used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 96 / (max. 20 kHz (A/B counters)), purple used as up/down counters or for connecting 2 incremental encoders with 2 pulse trains offset by 96 / (max. 20 kHz (A/B counters)), purple used as up/down counters or for connecting 2		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	
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between different circuits Degree and class of protection IP degree of protection IP20 Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Air pressure acc. to IEC 60068-2-13 • permissible range, lower limit 500 V DC between 24 V DC and 5 V DC IP20 Are Detailed in 5 V DC O °C O °C O °C O °C O °C Air pressure acc. to IEC 60068-2-13 • permissible range, lower limit 860 hPa		4	
Degree and class of protection IP degree of protection Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. 45 °C Air pressure acc. to IEC 60068-2-13 • permissible range, lower limit IP20 IP20 O °C 45 °C	Permissible potential difference		
IP degree of protection Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • horizontal installation, max. • vertical installation, min. • vertical installation, max. • vertical installation, max. 45 °C Air pressure acc. to IEC 60068-2-13 • permissible range, lower limit 860 hPa		500 V DC between 24 V DC and 5 V DC	
Ambient conditions Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Air pressure acc. to IEC 60068-2-13 • permissible range, lower limit 860 hPa	Degree and class of protection		
Ambient temperature during operation • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. Air pressure acc. to IEC 60068-2-13 • permissible range, lower limit 860 hPa	IP degree of protection	IP20	
 horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. vertical installation, max. vertical installation, max. 45 °C Air pressure acc. to IEC 60068-2-13 permissible range, lower limit 860 hPa 	Ambient conditions		
 horizontal installation, max. vertical installation, min. 0 °C vertical installation, max. vertical installation, max. 45 °C Air pressure acc. to IEC 60068-2-13 permissible range, lower limit 860 hPa 	Ambient temperature during operation		
 vertical installation, min. vertical installation, max. 45 °C Air pressure acc. to IEC 60068-2-13 permissible range, lower limit 860 hPa 	 horizontal installation, min. 	0 °C	
 vertical installation, max. Air pressure acc. to IEC 60068-2-13 permissible range, lower limit 860 hPa 	 horizontal installation, max. 	55 °C	
Air pressure acc. to IEC 60068-2-13 • permissible range, lower limit 860 hPa	 vertical installation, min. 	0 °C	
permissible range, lower limit 860 hPa	vertical installation, max.	45 °C	
	Air pressure acc. to IEC 60068-2-13		
• permissible range, upper limit 1 080 hPa	 permissible range, lower limit 	860 hPa	
	 permissible range, upper limit 	1 080 hPa	

Relative humidity 5 % · Operation, min. • Operation, max. 95 %; RH class 2 in accordance with IEC 1131-2 configuration / header configuration / programming / header 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 Plug-in I/O terminals No Width 90 mm Height 80 mm Depth 62 mm

270 g

	Version	Classification
eClass	14	27-24-22-07
eClass	12	27-24-22-07
eClass	9.1	27-24-22-07
eClass	9	27-24-22-07
eClass	8	27-24-22-07
eClass	7.1	27-24-22-07
eClass	6	27-24-22-07
ETIM	9	EC000236
ETIM	8	EC000236
ETIM	7	EC000236
IDEA	4	3565
UNSPSC	15	32-15-17-05

Approvals / Certificates

Weight, approx.

Classifications

General Product Approval For use in hazardous locations



Miscellaneous



<u>FM</u>



Marine / Shipping



Marine / Shipping



Kegi

Lloyd's Register NK / Nippon Kaiji Kyokai



CCS (China Classification Society)

last modified: 5/22/2024 🖸