

\*\*\*SPARE PART\*\*\* SIPLUS S7-200 CPU224 AC 14 DI / 10 RO - 25...+70 DGR C WITH CONFORMLA COATING BASED ON 6ES7214-1BD23-0XB0 . COMPACT UNIT, AC POWER SUPPLY 14 DI DC/10 DO, RELAY, 8/12 KB CODE/8 KB DATA, PROFIBUS DP EXTENDABLE



Figure similar

### Supply voltage

Rated value (AC)

- |            |     |
|------------|-----|
| • 120 V AC | Yes |
| • 230 V AC | Yes |

Load voltage L1

- |  |                             |
|--|-----------------------------|
| • Rated value (AC)                         | 100 V; 100 V AC to 230 V AC |
| • permissible range, lower limit (AC)      | 85 V                        |
| • permissible range, upper limit (AC)      | 250 V                       |
| • permissible frequency range, lower limit | 47 Hz                       |
| • permissible frequency range, upper limit | 63 Hz                       |

### Input current

- |                              |  |
|------------------------------|--|
| Inrush current, max.         | 20 A; at 264 V   |
| from supply voltage L1, max. | 200 mA; 30 to 100 mA (240 V); 60 to 200 mA (120 V); output current for expansion modules (5 V DC) 600 mA |

### Encoder supply

24 V encoder supply

- 24 V
  - Short-circuit protection
  - Output current, max.
- Yes; Permissible range: 20.4V to 28.8V  
 Yes; electronic at 280 mA  
 280 mA

## Memory

Number of memory modules (optional) 1; pluggable memory module, content identical with integral EEPROM; can additionally store recipes, data logs and other files

### Work memory

- integrated (for program) 12 kbyte; 8 KB with active run-time edit
- integrated (for data) 8 kbyte

### Backup

- present Yes; Program: Entire program maintenance-free on integral EEPROM, programmable via CPU; data: Entire DB 1 loaded from PG/PC maintenance-free on integral EEPROM, current values of DB 1 in RAM, retentive memory bits, timers, counters, etc. maintenance-free via high-performance capacitor; optional battery for long-term buffering

## Battery

### Backup battery

- Backup time, max. 100 h; (min. 70 h at 40 °C); 200 days (typ.) with optional battery module

## CPU processing times

for bit operations, max. 0.22 µs

## Counters, timers and their retentivity

### S7 counter

- Number 256

#### of which retentive with battery

- can be set Yes; via high-performance capacitor or battery
- lower limit 1
- upper limit 256

#### Counting range

- lower limit 0
- upper limit 32 767

### S7 times

- Number 256

#### of which retentive with battery

- adjustable Yes; via high-performance capacitor or battery
- upper limit 64

#### Time range

- lower limit 1 ms
- upper limit 54 min; 4 timers: 1 ms to 30 s; 16 timers: 10 ms to 5 min; 236 timers: 100 ms to 54 min

## Data areas and their retentivity

Flag	
• Number, max.	32 byte
• Retentivity available	Yes; M 0.0 to M 31.7
• of which retentive 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

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.
connectable programming devices/PCs	SIMATIC PG/PC, standard PC

Expansion modules	
• Analog inputs/outputs, max.	35; max. 28 inputs and 7 outputs (EM) or max. 0 inputs and 14 outputs (EM)
• Digital inputs/outputs, max.	168; max. 94 inputs and 74 outputs (CPU + EM)
• AS-Interface inputs/outputs, max.	62; AS-Interface A/B slaves (CP 243-2)

## Digital inputs

Number of digital inputs	14
Source/sink input	Yes; optionally, per group

Input voltage	
• Rated value (DC)	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 counter/technological functions	
— parameterizable	Yes; (E 0.0 to E 1.5) 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	10; Relays
Short-circuit protection	No; to be provided externally
Switching capacity of the outputs	

<ul style="list-style-type: none"> <li>• with resistive load, max.</li> <li>• on lamp load, max.</li> </ul>	2 A 200 W; 30 W with DC, 200 W with AC
<b>Output voltage</b>	
<ul style="list-style-type: none"> <li>• for signal "1", min.</li> </ul>	L+/L1
<b>Output current</b>	
<ul style="list-style-type: none"> <li>• for signal "1" rated value</li> <li>• for signal "0" residual current, max.</li> </ul>	2 A 0 mA
<b>Output delay with resistive load</b>	
<ul style="list-style-type: none"> <li>• "0" to "1", max.</li> <li>• "1" to "0", max.</li> </ul>	10 ms; all outputs 10 ms; all outputs
<b>Parallel switching of two outputs</b>	
<ul style="list-style-type: none"> <li>• for uprating</li> </ul>	No
<b>Switching frequency</b>	
<ul style="list-style-type: none"> <li>• of the pulse outputs, with resistive load, max.</li> </ul>	1 Hz
<b>Total current of the outputs (per group)</b>	
all mounting positions	
— up to 40 °C, max.	10 A
horizontal installation	
— up to 55 °C, max.	10 A
<b>Relay outputs</b>	
<ul style="list-style-type: none"> <li>• Number of relay outputs, integrated</li> <li>• Number of operating cycles, max.</li> </ul>	10 10 000 000; mechanically 10 million, at rated load voltage 100 000
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>• shielded, max.</li> <li>• unshielded, max.</li> </ul>	500 m 150 m
<b>Analog inputs</b>	
Number of analog potentiometers	2; Analog potentiometer; resolution 8 bit
<b>Encoder</b>	
<b>Connectable encoders</b>	
<ul style="list-style-type: none"> <li>• 2-wire sensor               <ul style="list-style-type: none"> <li>— permissible quiescent current (2-wire sensor), max.</li> </ul> </li> </ul>	Yes 1 mA
<b>1. Interface</b>	
Interface type	Integrated RS 485 interface
Physics	RS 485
<b>Functionality</b>	
<ul style="list-style-type: none"> <li>• MPI</li> </ul>	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	6; 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

### 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; Relays
• between the channels, in groups of	3 and 4

### Permissible potential difference

between different circuits	500 V DC between 24 V DC and 5 V DC; 1500 V AC between 24 V DC and 230 V AC
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### Degree and class of protection

Degree of protection acc. to EN 60529	
• IP20	Yes

### Ambient conditions

Ambient temperature during operation	
• horizontal installation, min.	-25 °C; = Tmin
• horizontal installation, max.	70 °C; = Tmax
• vertical installation, min.	-25 °C; = Tmin
• vertical installation, max.	45 °C; = Tmax

### Extended ambient conditions

• relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m)
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<b>Relative humidity</b>	
— With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)

<b>Resistance</b>	
— against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
— against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
— against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!

## 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
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## Connection method

Plug-in I/O terminals	Yes
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## Dimensions

Width	120.5 mm
Height	80 mm
Depth	62 mm

## Weights

Weight, approx.	410 g
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