

\*\*\*Spare part\*\*\* SIMATIC S7-200, CPU 226 Compact unit, AC power supply 24 DI DC/16 DO relay 16/24 KB progr./10 KB data, 2 PPI/user-programmable interface



Figure similar

Supply voltage	
Rated value (AC)	
<ul style="list-style-type: none"> <li>120 V AC</li> <li>230 V AC</li> </ul>	Yes
Load voltage L+	
<ul style="list-style-type: none"> <li>Rated value (DC)</li> <li>permissible range, lower limit (DC)</li> <li>permissible range, upper limit (DC)</li> </ul>	24 V 5 V 30 V
Load voltage L1	
<ul style="list-style-type: none"> <li>Rated value (AC)</li> <li>permissible range, lower limit (AC)</li> <li>permissible range, upper limit (AC)</li> <li>permissible frequency range, lower limit</li> <li>permissible frequency range, upper limit</li> </ul>	100 V; 100 V AC to 230 V AC 5 V 250 V 47 Hz 63 Hz
Input current	
Inrush current, max.	20 A; at 264 V
from supply voltage L1, max.	320 mA; 40 to 160 mA (240 V); 80 to 320 mA (120 V); output current for expansion modules (5 V DC) 1 000 mA
Encoder supply	
24 V encoder supply	
<ul style="list-style-type: none"> <li>24 V</li> <li>Short-circuit protection</li> <li>Output current, max.</li> </ul>	Yes; Permissible range: 20.4V to 28.8V Yes; electronic at 400 mA 400 mA
Power loss	
Power loss, typ.	17 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	
<ul style="list-style-type: none"> <li>integrated (for program)</li> <li>integrated (for data)</li> </ul>	24 kbyte; 16 KB with active run-time edit 10 kbyte
Backup	
<ul style="list-style-type: none"> <li>present</li> </ul>	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
<b>CPU processing times</b>	
for bit operations, max.	0.22 µs
<b>Counters, timers and their retentivity</b>	
<b>S7 counter</b>	
• Number	256
<b>Retentivity</b>	
— adjustable	Yes; via high-performance capacitor or battery
— lower limit	1
— upper limit	256
<b>Counting range</b>	
— lower limit	0
— upper limit	32 767
<b>S7 times</b>	
• Number	256
<b>Retentivity</b>	
— adjustable	Yes; via high-performance capacitor or battery
— upper limit	64
<b>Time range</b>	
— 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
<b>Data areas and their retentivity</b>	
<b>Flag</b>	
• 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
<b>Hardware configuration</b>	
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
<b>Expansion modules</b>	
• Analog inputs/outputs, max.	35; max. 28 inputs and 7 outputs (EM) or max. 0 inputs and 14 outputs (EM)
• Digital inputs/outputs, max.	148; max. 128 inputs and 120 outputs (CPU+EM)
• AS-Interface inputs/outputs, max.	62; AS-Interface A/B slaves (CP 243-2)
<b>Digital inputs</b>	
Number of digital inputs	24
Source/sink input	Yes; optionally, per group
<b>Input voltage</b>	
• Rated value (DC)	24 V
• for signal "0"	0 to 5 V
• for signal "1"	min. 15 V
<b>Input current</b>	
• for signal "1", typ.	2.5 mA
<b>Input delay (for rated value of input voltage)</b>	
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 1.5) 30 kHz
<b>Cable length</b>	
• shielded, max.	500 m; Standard input: 500 m, high-speed counters: 50 m
• unshielded, max.	300 m; not for high-speed signals
<b>Digital outputs</b>	
Number of digital outputs	16; 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
Output voltage	
<ul style="list-style-type: none"> <li>for signal "1", min.</li> </ul>	L+/L1
Output current	
<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
Output delay with resistive load	
<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
Parallel switching of two outputs	
<ul style="list-style-type: none"> <li>for uprating</li> </ul>	No
Switching frequency	
<ul style="list-style-type: none"> <li>of the pulse outputs, with resistive load, max.</li> </ul>	1 kHz
Total current of the outputs (per group)	
all mounting positions	
— up to 40 °C, max.	10 A
horizontal installation	
— up to 55 °C, max.	10 A
Relay outputs	
<ul style="list-style-type: none"> <li>Number of relay outputs</li> <li>Number of operating cycles, max.</li> </ul>	16 10 000 000; mechanically 10 million, at rated load voltage 100 000
Cable length	
<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>	
Connectable encoders	
<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
Protocols	
<ul style="list-style-type: none"> <li>MPI</li> <li>PPI</li> <li>serial data exchange</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 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 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	
<ul style="list-style-type: none"> <li>Transmission rate, min.</li> <li>Transmission rate, max.</li> </ul>	19.2 kbit/s 187.5 kbit/s
<b>2. Interface</b>	
Interface type	Integrated RS 485 interface
Protocols	
<ul style="list-style-type: none"> <li>MPI</li> <li>PPI</li> <li>serial data exchange</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 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 Yes; As freely programmable interface with interrupt facility for serial data exchange with third-party devices with ASCII protocol transfer

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## Integrated Functions

Counter	
<ul style="list-style-type: none"> <li>Number of counters</li> </ul>	6; 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 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.
<ul style="list-style-type: none"> <li>Counting frequency, max.</li> </ul>	30 kHz
Number of alarm inputs	4; 4 rising edges and/or 4 falling edges

## Potential separation

Potential separation digital inputs	
<ul style="list-style-type: none"> <li>between the channels</li> <li>between the channels, in groups of</li> </ul>	Yes; Optocoupler 13 and 11
Potential separation digital outputs	
<ul style="list-style-type: none"> <li>between the channels</li> <li>between the channels, in groups of</li> </ul>	Yes; Relays 4, 5 and 7

## 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

IP degree of protection	IP20
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## Ambient conditions

Ambient temperature during operation	
<ul style="list-style-type: none"> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> </ul>	0 °C 55 °C 0 °C 45 °C
Air pressure acc. to IEC 60068-2-13	
<ul style="list-style-type: none"> <li>permissible range, lower limit</li> <li>permissible range, upper limit</li> </ul>	860 hPa 1 080 hPa
Relative humidity	
<ul style="list-style-type: none"> <li>Operation, min.</li> <li>Operation, max.</li> </ul>	5 % 95 %; RH class 2 in accordance with IEC 1131-2

## configuration / header

configuration / programming / header	
<ul style="list-style-type: none"> <li>Command set</li> <li>Program processing</li> <li>Program organization</li> <li>Number of subroutines, max.</li> </ul>	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  free cycle (OB 1), interrupt-controller, time-controlled (1 to 255 ms) 1 OB, 1 DB, 1 SDB subroutines with/without parameter transfer 64
Programming language	
<ul style="list-style-type: none"> <li>— LAD</li> <li>— FBD</li> <li>— STL</li> </ul>	Yes Yes Yes
Know-how protection	
<ul style="list-style-type: none"> <li>User program protection/password protection</li> </ul>	Yes; 3-stage password protection

## connection method / header

Plug-in I/O terminals	Yes
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## Dimensions

Width	196 mm
Height	80 mm
Depth	62 mm

## Weights

Weight, approx.	660 g
last modified:	3/12/2021 

