

SIMATIC S7-200 SMART, CPU CR40, compact CPU, AC/DC/relay, onboard I/O: 24 DI 24 V DC; 16 DO relay 2A; Power supply: AC 85-264 V AC at 47-63 Hz, Program/data memory 20 KB



General information	
Product type designation	CPU CR40 AC/DC/Relay
Engineering with	
• Programming package	STEP 7 Micro/WIN SMART
Installation type/mounting	
Rail mounting	Yes; Standard - DIN rail
Supply voltage	
Rated value (AC)	
• 120 V AC	Yes
• 230 V AC	Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	264 V
Line frequency	
• permissible range, lower limit	47 Hz
• permissible range, upper limit	63 Hz
Input current	
Current consumption (rated value)	150 mA; at 240 V AC

Current consumption, max.	250 mA; At 120 V AC
Inrush current, max.	7.3 A; at 264 V
<b>Output current</b>	
Current output, max.	300 mA; 24 V DC Sensor Power
<b>Power loss</b>	
Power loss, max.	18 W
<b>Memory</b>	
Type of memory	DDR
Flash	Yes
RAM	Yes
Memory available for user data	8 kbyte
Memory size	12 kbyte; Program memory
Micro Memory Card	Yes; microSDHC Card (optional)
<b>CPU processing times</b>	
for bit operations, typ.	150 ns; / instruction
for word operations, typ.	1.2 $\mu$ s; / instruction
for floating point arithmetic, typ.	3.6 $\mu$ s; / instruction
<b>Address area</b>	
I/O address area	
• Inputs	32 byte; Digital inputs
• Outputs	32 byte; Digital outputs
<b>Time of day</b>	
Clock	
• Type	Hardware clock, no battery backup
• Hardware clock (real-time)	Yes
• Backup time	7 d
• Deviation per day, max.	4 s; within 120s/month at 25 °C
<b>Digital inputs</b>	
Number of digital inputs	24
Input voltage	
• Type of input voltage	DC
• Rated value (DC)	24 V
• for signal "0"	< 5 V DC
• for signal "1"	+15 to +30 V
Input current	
• for signal "1", typ.	4 mA
Cable length	
• shielded, max.	500 m; 50m shielded for HSC inputs
• unshielded, max.	300 m

Digital outputs	
Number of digital outputs	16; Relays
Switching capacity of the outputs	
<ul style="list-style-type: none"> <li>with resistive load, max.</li> </ul>	2 A
<ul style="list-style-type: none"> <li>on lamp load, max.</li> </ul>	30 W; 30 W with DC, 200 W with AC
Relay outputs	
<ul style="list-style-type: none"> <li>Number of relay outputs</li> </ul>	16
Cable length	
<ul style="list-style-type: none"> <li>shielded, max.</li> </ul>	500 m
<ul style="list-style-type: none"> <li>unshielded, max.</li> </ul>	150 m
Interfaces	
Number of industrial Ethernet interfaces	1
Number of RS 485 interfaces	1
1. Interface	
Interface type	Ethernet
Isolated	Yes; Transformer isolated, 1,500V AC
automatic detection of transmission rate	Yes; 10/100 Mbit/s
Autonegotiation	Yes
Autocrossing	Yes
Interface types	
<ul style="list-style-type: none"> <li>RJ 45 (Ethernet)</li> </ul>	Yes
2. Interface	
Interface type	RS 485 (max. 187.5 kbps)
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIBUS	No
Protocols (Ethernet)	
<ul style="list-style-type: none"> <li>TCP/IP</li> </ul>	Yes
Communication functions	
S7 communication	
<ul style="list-style-type: none"> <li>supported</li> </ul>	Yes
<ul style="list-style-type: none"> <li>as server</li> </ul>	Yes
<ul style="list-style-type: none"> <li>as client</li> </ul>	Yes
Test commissioning functions	
Forcing	
<ul style="list-style-type: none"> <li>Forcing</li> </ul>	Yes
Integrated Functions	
Number of counters	4; 4 at 100 kHz single phase or 2 at 50 kHz A/B phase

PID controller	Yes; PID closed-loop control function: Continuous controller outputs, binary controller outputs, automatic/manual mode, max. 8 loops
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## EMC

### Interference immunity against discharge of static electricity

<ul style="list-style-type: none"> <li>• Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 <ul style="list-style-type: none"> <li>— Test voltage at air discharge</li> <li>— Test voltage at contact discharge</li> </ul> </li> </ul>	<p>Yes</p> <p>8 kV</p> <p>4 kV</p>
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### Interference immunity against high-frequency electromagnetic fields

<ul style="list-style-type: none"> <li>• Interference immunity against high-frequency radiation acc. to IEC 61000-4-3</li> </ul>	Yes; 10 V/m, 80 to 1 000 MHz (to IEC 61000-4-3); 10 V/m, 900 MHz, 1.89 GHz, 50% ED (to IEC 61000-4-3)
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### Interference immunity to cable-borne interference

<ul style="list-style-type: none"> <li>• Interference immunity on supply lines acc. to IEC 61000-4-4</li> <li>• Interference immunity on signal cables acc. to IEC 61000-4-4</li> </ul>	<p>Yes; 2 kV acc. to IEC 61000-4-4, burst</p> <p>Yes; ±2 kV acc. to IEC 61000-4-4, Burst</p>
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### Interference immunity against conducted variable disturbance induced by high-frequency fields

<ul style="list-style-type: none"> <li>• Interference immunity against high frequency current feed acc. to IEC 61000-4-6</li> </ul>	Yes; 10 V, 150 kHz to 80 MHz (to IEC 61000-4-6)
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### Emission of radio interference acc. to EN 55 011

<ul style="list-style-type: none"> <li>• Limit class A, for use in industrial areas</li> </ul>	Yes; EN 61000-6-4, interference emission: Intended for use in industrial areas.
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### Emission of conducted and non-conducted interference

<ul style="list-style-type: none"> <li>• Interference emission via line/AC current cables</li> </ul>	EN 61000-6-4, interference emission: Intended for use in industrial areas.
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## Degree and class of protection

Degree of protection acc. to EN 60529	IP20
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## Standards, approvals, certificates

CE mark	Yes
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## Ambient conditions

### Free fall

<ul style="list-style-type: none"> <li>• Fall height, max.</li> </ul>	0.3 m; five times, in product package
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### Ambient temperature during operation

<ul style="list-style-type: none"> <li>• min.</li> <li>• max.</li> <li>• horizontal installation, min.</li> <li>• horizontal installation, max.</li> <li>• vertical installation, min.</li> <li>• vertical installation, max.</li> </ul>	<p>0 °C</p> <p>55 °C</p> <p>0 °C</p> <p>55 °C</p> <p>0 °C</p> <p>45 °C</p>
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### Ambient temperature during storage/transportation

<ul style="list-style-type: none"> <li>• min.</li> </ul>	-40 °C
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• max.	70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
<b>Altitude during operation relating to sea level</b>	
• Installation altitude, min.	-1 000 m
• Installation altitude, max.	2 000 m
<b>Relative humidity</b>	
• Operation at 25 °C without condensation, max.	95 %

<b>Configuration</b>	
<b>Programming</b>	
<b>Programming language</b>	
— LAD	Yes
— FBD	Yes
— STL	Yes

<b>Dimensions</b>	
Width	125 mm
Height	100 mm
Depth	81 mm

<b>Weights</b>	
Weight, approx.	440 g
<b>last modified:</b>	03/14/2020