

## Data sheet

## 6ES7288-1SR20-0AA0

\*\*\* spare part \*\*\* SIMATIC S7-200 SMART, CPU SR20, CPU, AC/DC/relay, onboard I/O: 12 DI 24 V DC; 8 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 SR20 AC/DC/Relay
Engineering with	
<ul style="list-style-type: none"> <li>Programming package</li> </ul>	STEP 7 Micro/WIN SMART
Installation type/mounting	
Rail mounting	Yes; Standard - DIN rail
Supply voltage	
Rated value (AC)	
<ul style="list-style-type: none"> <li>120 V AC</li> <li>230 V AC</li> </ul>	Yes Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	264 V
Line frequency	
<ul style="list-style-type: none"> <li>permissible range, lower limit</li> <li>permissible range, upper limit</li> </ul>	47 Hz 63 Hz
Input current	
Current consumption (rated value)	170 mA; at 240 V AC
Current consumption, max.	290 mA; At 120 V AC
Inrush current, max.	9.3 A; at 264 V
Output current	
Current output, max.	300 mA; 24 V DC Sensor Power
for backplane bus (5 V DC), max.	1.4 A; max. 5 V DC for EM bus
Power loss	
Power loss, max.	14 W
Memory	
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)
Backup	
<ul style="list-style-type: none"> <li>present</li> </ul>	Yes; Maintenance free, RTC requires 7 days.
CPU processing times	
for bit operations, typ.	150 ns; / instruction
for word operations, typ.	1.2 µs; / instruction
for floating point arithmetic, typ.	3.6 µs; / instruction
Address area	
I/O address area	
<ul style="list-style-type: none"> <li>Inputs</li> <li>Outputs</li> </ul>	144 byte; 256 bit of digital inputs & 56 words of analog inputs 144 byte; 256 bit of digital outputs & 56 words of analog outputs
Time of day	
Clock	
<ul style="list-style-type: none"> <li>Type</li> <li>Hardware clock (real-time)</li> <li>Backup time</li> <li>Deviation per day, max.</li> </ul>	Hardware clock, no battery backup Yes 7 d 120 s; within 120s/month at 25 °C
Digital inputs	

Number of digital inputs	12
• of which inputs usable for technological functions	6; HSC (High Speed Counting)
Sourcing/sinking input	Yes
<b>Number of simultaneously controllable inputs</b>	
all mounting positions	
— up to 40 °C, max.	12
<b>Input voltage</b>	
• Type of input voltage	DC
• Rated value (DC)	24 V
• for signal "0"	5 V DC at 1 mA
• for signal "1"	15 V DC at 2.5 mA
<b>Input current</b>	
• for signal "0", max. (permissible quiescent current)	1 mA
• for signal "1", typ.	4 mA
<b>Input delay (for rated value of input voltage)</b>	
for standard inputs	
— parameterizable	Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
for interrupt inputs	
— parameterizable	Yes
for technological functions	
— parameterizable	Yes; 6 Single phase: 4 HSCs at 200 kHz; 2 HSCs at 30 kHz 4 A/B phase: 2 HSCs at 100 kHz; 2 HSCs at 20 kHz
<b>Cable length</b>	
• shielded, max.	500 m; 50 m for technological functions
• unshielded, max.	300 m; for technological functions: No
<b>Digital outputs</b>	
Number of digital outputs	8; Relays
<b>Switching capacity of the outputs</b>	
• with resistive load, max.	2 A
• on lamp load, max.	30 W; 30 W with DC, 200 W with AC
<b>Output delay with resistive load</b>	
• "0" to "1", max.	10 ms; max.
• "1" to "0", max.	10 ms; max.
<b>Switching frequency</b>	
• of the pulse outputs, with resistive load, max.	1 Hz
<b>Relay outputs</b>	
• Number of relay outputs	8
<b>Cable length</b>	
• shielded, max.	500 m
• unshielded, max.	150 m
<b>Interfaces</b>	
Number of industrial Ethernet interfaces	1
Number of RS 485 interfaces	1
<b>1. Interface</b>	
Interface type	PROFINET
Isolated	Yes; Transformer isolated, 1,500V AC
automatic detection of transmission rate	Yes; 10/100 Mbit/s
Autonegotiation	Yes
Autocrossing	Yes
<b>Interface types</b>	
• RJ 45 (Ethernet)	Yes
<b>Protocols</b>	
• PROFINET IO Controller	Yes; Since V2.4
• PROFINET IO Device	Yes; I-Device since V2.5
<b>PROFINET IO Controller</b>	
• Transmission rate, max.	100 Mbit/s

<b>Services</b>	
— Number of connectable IO Devices, max.	8
— Updating time	4 ms; The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.
<b>Address area</b>	
— Inputs, max.	128 byte; Per device
— Outputs, max.	128 byte; Per device
<b>2. Interface</b>	
Interface type	RS 485 (max. 187.5 kbps)
<b>Interface types</b>	
• RS 485	Yes
<b>PROFIBUS DP master</b>	
<b>Services</b>	
— S7 communication	Yes
<b>Protocols</b>	
Supports protocol for PROFINET IO	Yes; RT Controller (since FW V2.4) & I-Device (since FW V2.5)
PROFIBUS	Yes; Via CM DP module
<b>Protocols (Ethernet)</b>	
• TCP/IP	Yes
<b>Communication functions</b>	
<b>S7 communication</b>	
• supported	Yes
• as server	Yes
• as client	Yes
<b>Test commissioning functions</b>	
<b>Forcing</b>	
• Forcing	Yes
<b>Integrated Functions</b>	
<b>Counter</b>	
• Number of counters	6
PID controller	Yes; PID closed-loop control function: Continuous controller outputs, binary controller outputs, automatic/manual mode, max. 8 loops
Number of pulse outputs	3
<b>EMC</b>	
<b>Interference immunity against discharge of static electricity</b>	
• Interference immunity against discharge of static electricity acc. to IEC 61000-4-2	Yes
— Test voltage at air discharge	8 kV
— Test voltage at contact discharge	4 kV
<b>Interference immunity against high-frequency electromagnetic fields</b>	
• Interference immunity against high-frequency radiation acc. to IEC 61000-4-3	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)
<b>Interference immunity to cable-borne interference</b>	
• Interference immunity on supply lines acc. to IEC 61000-4-4	Yes; 2 kV acc. to IEC 61000-4-4, burst
• Interference immunity on signal cables acc. to IEC 61000-4-4	Yes; ±2 kV acc. to IEC 61000-4-4, Burst
<b>Interference immunity against conducted variable disturbance induced by high-frequency fields</b>	
• Interference immunity against high frequency current feed acc. to IEC 61000-4-6	Yes; 10 V, 150 kHz to 80 MHz (to IEC 61000-4-6)
<b>Emission of radio interference acc. to EN 55 011</b>	
• Limit class A, for use in industrial areas	Yes; EN 61000-6-4, interference emission: Intended for use in industrial areas.
<b>Emission of conducted and non-conducted interference</b>	
• Interference emission via line/AC current cables	EN 61000-6-4, interference emission: Intended for use in industrial areas.
<b>Degree and class of protection</b>	
IP degree of protection	IP20
<b>Standards, approvals, certificates</b>	
CE mark	Yes
<b>Ambient conditions</b>	
Free fall	

• Fall height, max.	0.3 m; five times, in product package
<b>Ambient temperature during operation</b>	
• min.	0 °C
• max.	55 °C
• horizontal installation, min.	0 °C
• horizontal installation, max.	55 °C
• vertical installation, min.	0 °C
• vertical installation, max.	45 °C
<b>Ambient temperature during storage/transportation</b>	
• min.	-40 °C
• 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>	
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes

<b>Dimensions</b>	
Width	90 mm
Height	100 mm
Depth	81 mm

<b>Weights</b>	
Weight, approx.	367.3 g

<b>Classifications</b>			
		<b>Version</b>	<b>Classification</b>
	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	10	EC000236
	ETIM	9	EC000236
	ETIM	8	EC000236
	ETIM	7	EC000236
	IDEA	4	3565
	UNSPSC	15	32-15-17-05

<b>Approvals / Certificates</b>	
<b>General Product Approval</b>	



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