

## Data sheet

## 6ES7288-1CR60-0AA0



SIMATIC S7-200 SMART, CPU CR60, compact CPU, AC/DC/relay, onboard I/O:  
36 DI 24 V DC; 24 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 CR60 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)   | 160 mA; at 240 V AC            |
| Current consumption, max.           | 280 mA; At 120 V AC            |
| Inrush current, max.                | 7.3 A; at 264 V                |
| Output current                      |                                |
| Current output, max.                | 300 mA; 24 V DC Sensor Power   |
| Power loss                          |                                |
| Power loss, max.                    | 20 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) |
| 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                    |                                |
| • Inputs                            | 32 byte; Digital inputs        |
| • Outputs                           | 32 byte; Digital outputs       |

| Time of day                              |  |
|--|--|
| 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  |
| Digital inputs                           |  |
| Number of digital inputs                 | 36   |
| 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                | 24; Relays   |
| Switching capacity of the outputs        |  |
| • with resistive load, max.              | 2 A  |
| • on lamp load, max.                     | 30 W; 30 W with DC, 200 W with AC  |
| Relay outputs                            |  |
| • Number of relay outputs                | 24   |
| Cable length                             |  |
| • shielded, max.                         | 500 m  |
| • unshielded, max.                       | 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                          |  |
| • RJ 45 (Ethernet)                       | Yes  |
| 2. Interface                             |  |
| Interface type                           | RS 485 (max. 187.5 kbps)   |
| Protocols                                |  |
| Supports protocol for PROFINET IO        | Yes  |
| PROFIBUS                                 | No   |
| Protocols (Ethernet)                     |  |
| • TCP/IP                                 | Yes  |
| Communication functions                  |  |
| S7 communication                         |  |
| • supported                              | Yes  |
| • as server                              | Yes  |
| • as client                              | Yes  |
| Test commissioning functions             |  |
| Forcing                                  |  |
| • Forcing                                | Yes  |
| Integrated Functions                     |  |
| Counter                                  |  |
| • 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 |

| 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</li> </ul> | Yes   |         |                |
| <ul style="list-style-type: none"> <li>— Test voltage at air discharge</li> </ul>   | 8 kV  |         |                |
| <ul style="list-style-type: none"> <li>— Test voltage at contact discharge</li> </ul>   | 4 kV  |         |                |
| 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) |         |                |
| 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> </ul>                         | Yes; 2 kV acc. to IEC 61000-4-4, burst  |         |                |
| <ul style="list-style-type: none"> <li>• Interference immunity on signal cables acc. to IEC 61000-4-4</li> </ul>                        | Yes; ±2 kV acc. to IEC 61000-4-4, Burst   |         |                |
| 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)   |         |                |
| 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.                       |         |                |
| 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.                            |         |                |
| Degree and class of protection  |   |         |                |
| IP degree of protection   | IP20  |         |                |
| Ambient conditions  |   |         |                |
| Free fall   |   |         |                |
| <ul style="list-style-type: none"> <li>• Fall height, max.</li> </ul>   | 0.3 m; five times, in product package   |         |                |
| Ambient temperature during operation  |   |         |                |
| <ul style="list-style-type: none"> <li>• min.</li> </ul>  | 0 °C  |         |                |
| <ul style="list-style-type: none"> <li>• max.</li> </ul>  | 55 °C   |         |                |
| <ul style="list-style-type: none"> <li>• horizontal installation, min.</li> </ul>   | 0 °C  |         |                |
| <ul style="list-style-type: none"> <li>• horizontal installation, max.</li> </ul>   | 55 °C   |         |                |
| <ul style="list-style-type: none"> <li>• vertical installation, min.</li> </ul>   | 0 °C  |         |                |
| <ul style="list-style-type: none"> <li>• vertical installation, max.</li> </ul>   | 45 °C   |         |                |
| Ambient temperature during storage/transportation   |   |         |                |
| <ul style="list-style-type: none"> <li>• min.</li> </ul>  | -40 °C  |         |                |
| <ul style="list-style-type: none"> <li>• max.</li> </ul>  | 70 °C   |         |                |
| Air pressure acc. to IEC 60068-2-13   |   |         |                |
| <ul style="list-style-type: none"> <li>• Storage/transport, min.</li> </ul>   | 660 hPa   |         |                |
| <ul style="list-style-type: none"> <li>• Storage/transport, max.</li> </ul>   | 1 080 hPa   |         |                |
| Altitude during operation relating to sea level   |   |         |                |
| <ul style="list-style-type: none"> <li>• Installation altitude, min.</li> </ul>   | -1 000 m  |         |                |
| <ul style="list-style-type: none"> <li>• Installation altitude, max.</li> </ul>   | 2 000 m   |         |                |
| Relative humidity   |   |         |                |
| <ul style="list-style-type: none"> <li>• Operation at 25 °C without condensation, max.</li> </ul>                                       | 95 %  |         |                |
| Configuration   |   |         |                |
| Programming   |   |         |                |
| Programming language  |   |         |                |
| <ul style="list-style-type: none"> <li>— LAD</li> </ul>   | Yes   |         |                |
| <ul style="list-style-type: none"> <li>— FBD</li> </ul>   | Yes   |         |                |
| <ul style="list-style-type: none"> <li>— STL</li> </ul>   | Yes   |         |                |
| Dimensions  |   |         |                |
| Width   | 175 mm  |         |                |
| Height  | 81 mm   |         |                |
| Depth   | 81 mm   |         |                |
| Weights   |   |         |                |
| Weight, approx.   | 620 g   |         |                |
| Classifications   |   |         |                |
|   | eClass  | Version | Classification |
|   |   | 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 |

## Approvals / Certificates

## General Product Approval

[China RoHS](#)

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