MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7288-1CR60-0AA0

CPU CR60 AC DC RELAY CONTROLLER

Used with the applicable SIMATIC S7-200 SMART configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Official manufacturer documentation applicable to 6ES7288-1CR60-0AA0

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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

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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

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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	
Number of counters	4; 4 at 100 kHz single phase or 2 at 50 kHz A/B phase

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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	
• 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
Interference immunity against high-frequency electromagnetic fields	
• 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)
Interference immunity to cable-borne interference	
• 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
Interference immunity against conducted variable disturbance induced by high-frequency fields	
• 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)
Emission of radio interference acc. to EN 55 011	
• Limit class A, for use in industrial areas	Yes; EN 61000-6-4, interference emission: Intended for use in industrial areas.
Emission of conducted and non-conducted interference	
• Interference emission via line/AC current cables	EN 61000-6-4, interference emission: Intended for use in industrial areas.

Degree and class of protection	
Degree of protection acc. to EN 60529	IP20

Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• 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
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	

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• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
Altitude during operation relating to sea level	
• Installation altitude, min.	-1 000 m
• Installation altitude, max.	2 000 m
Relative humidity	
• Operation at 25 °C without condensation, max.	95 %

Configuration	
Programming	
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes

Dimensions	
Width	175 mm
Height	81 mm
Depth	81 mm

Weights	
Weight, approx.	620 g

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