SIEMENS

Data sheet 6ES7288-1CR30-0AA1

SIMATIC S7-200 SMART CPU CR30s, COMPACT CPU, AC/DC/RELAY, ONBOARD I/O: 18 DI 24V DC; 12DO RELAY 2A; POWER SUPPLY: AC, 85 - 264 V AC AT 47 - 63 HZ, PROGRAM/DATA MEMORY: 20 KB

General information	
Product type designation	CPU CR30 AC/DC/relay
Engineering with	
• Programming package	STEP 7 Micro/WIN SMART
Installation type/mounting	
Rail mounting	Yes; Standard - DIN rail
Supply voltage	
Type of supply voltage	85V to 264VAC
Rated value (DC)	
• 24 V DC	No
Rated value (AC)	230 V; 230 V AC (L1, N)
• 120 V AC	Yes; 85 to 132 V AC
• 230 V AC	Yes; 170 to 264 V AC
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	264 V
Reverse polarity protection	No
Line frequency	
• permissible range, lower limit	47 Hz

• permissible range, upper limit	63 Hz
Load voltage L+	
• Rated value (DC)	24 V
• permissible range, lower limit (DC)	5 V
• permissible range, upper limit (DC)	250 V

Input current	
Current consumption (rated value)	90 mA; At 220 V AC
Current consumption, max.	90 mA; At 220 V AC
Inrush current, max.	16.3 A; at 264 V

Power loss	
Power loss, max.	7 W; max.

Memory	
Type of memory	DDR
Flash	Yes
RAM	Yes
Micro Memory Card	No

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

Hardware configuration	
Integrated power supply	No
Number of modules per system, max.	0

Time of day	
Clock	
• Type	Software clock
• Hardware clock (real-time)	No

Digital inputs	
Number of digital inputs	18; Integrated
• of which inputs usable for technological functions	4; HSC: 4 @ 100 kHz single phase, 2 @ 50 kHz A/B phase
Source/sink input	Yes
Input voltage	
• Rated value (DC)	24 V
• for signal "0"	< 5 V DC
• for signal "1"	+15 to +30V
Input current	
• for signal "0", max. (permissible quiescent current)	1 mA
• for signal "1", typ.	4 mA; Typical

Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 0.2 µs, 0.4 µs, 0.8 µs, 1.6 µs, 3.2 µs, 6.4 µs and 12.8 µs, selectable in 4 groups
— at "0" to "1", min.	0.2 µs
— at "0" to "1", max.	12.8 µs
for interrupt inputs	
— parameterizable	Yes
Cable length	
• shielded, max.	500 m; Standard input: 500 m, high-speed counters: 50 m
• unshielded, max.	300 m

Digital outputs	
Number of digital outputs	12; 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
Output delay with resistive load	
• "0" to "1", max.	10 ms; max.
• "1" to "0", max.	10 ms; max.
Switching frequency	
• of the pulse outputs, with resistive load, max.	1 Hz
Relay outputs	
• Number of relay outputs	12
• Number of operating cycles, max.	100 000; mechanically 10 million, at rated load voltage 100 000
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m

Interfaces	
Number of RS 485 interfaces	1
With optical interface	No

1. Interface	
Interface type	9-pin sub D socket
Physics	RS 485
Isolated	Yes; 500 V AC or 707 V DC

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)
— Frequency range of the RF radiation	10 V/m for 80 MHz ~ 1 GHz, 3 V/m for 1.4 GHz ~ 2 GHz, 3 V/m for 87 MHz ~ 108 MHz, 174 MHz ~ 230 MHz, 470 MHz ~ 790 MHz, 1.4 GHz ~ 2 GHz, 1 V/m for 2 GHz ~ 2.7 GHz
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 voltage surge	
• on the supply lines acc. to IEC 61000-4-5	Yes; ±1 kV (acc. to IEC 61000-4-5; 1995; surge symm.), ±2 kV (acc. to IEC 61000-4-5; 1995; surge asymm.), no external protective circuit required
• asymmetric interference	
— Test voltage on supply cables	2 kV
— Test voltage on signal cables >30m	2 kV
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	Yes

Standards, approvals, certificates

CE mark	Yes

Ambient conditions

Free fall	
• Fall height, max.	0.5 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	
• 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	110 mm
Height	100 mm
Depth	81 mm

Weights	
Weight, approx.	424 g; approx.

last modified: 09/26/2018