



Product data sheet
6ES7212-1BD30-0XB0

SIMATIC S7-1200, CPU 1212C, COMPACT CPU, AC/DC/RLY, ONBOARD I/O: 8 DI 24V DC; 6 DO RELAY 0,5A; 2 AI 0 - 10V DC, POWER SUPPLY: AC 85 - 264 V AC @ 47 - 63 HZ, PROGRAM/DATA MEMORY: 25 KB

Product status

associated programming package STEP 7 Basic V10.5

Supply voltages

Rated value

AC 120 V Yes

AC 230 V Yes

permissible range, lower limit (AC) 85 V

permissible range, upper limit (AC) 264 V

permissible frequency range, lower limit 47 Hz

permissible frequency range, upper limit 63 Hz

Short-circuit protection 0.0000000000000000E+00

Load voltage L+

Rated value (DC) 24 V

permissible range, lower limit (DC) 5 V

permissible range, upper limit (DC) 250 V

Current consumption

Current consumption (rated value) 80 mA @ 120 VAC 40 mA @ 240 VAC

Current consumption, max. 240 mA @ 120 VAC 120 mA @ 240 VAC

Inrush current, max. 20 A ; At 264 V

Current output to backplane bus (DC 5 V), max. 1000 mA ; 5 VDC max. for SM and CM

Current consumption/power loss

Power loss, typ. 11 W

Memory

Usable memory for user data 25 kbyte

RAM

integrated 25 kbyte

expandable No

Backup	
present	Yes ; entire project maintenance-free in the integral EEPROM
without battery	Yes
CPU/blocks	
OB	
Number, max.	Limited only by RAM for code
CPU/processing times	
for bit operations, min.	0.1 μ s ; / instruction
for word operations, min.	12 μ s ; / instruction
for floating point arithmetic, min.	18 μ s ; / instruction
Data areas and their remanence	
Retentive data area in total (incl. times, counters, flags), max.	2048 byte
Flag	
Number, max.	4 kbyte ; Size of bit memory address area
Address area	
I/O address area	
I/O address area, overall	1024 bytes for inputs / 1024 bytes for outputs
Inputs	1024 byte
Outputs	1024 byte
Process image	
Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
Digital channels	
integrated channels (DI)	8
integrated channels (DO)	6
Analog channels	
Number of integrated channels (AI)	2
Number of integrated channels (AO)	0
Hardware config.	
Number of modules per system, max.	3 comm. modules, 1 signal board, 2 signal modules
Time	
Clock	
Hardware clock (real-time clock)	Yes
Backup time	240 h ; Typical

Deviation per day, max.	60 s/month @ 25°C
Test commissioning functions	
Status/control	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DB, distributed I/Os, timers, counters
Forcing	
Forcing	Yes
Communication functions	
S7 communication	
supported	Yes
as server	Yes
Open IE communication	
TCP/IP	Yes
ISO-on-TCP (RFC1006)	Yes
Number of connections	
overall	15 ; dynamically
1st interface	
Type of interface	PROFINET
Physics	Ethernet
isolated	Yes
automatic detection of transmission speed	Yes
Autonegotiation	Yes
Product function / at the interface 1 / Autocrossover	Yes
CPU/programming	
Configuration software	
STEP 7	STEP 7 Basic V10.5
Programming language	
LAD	Yes
FUP	Yes
Cycle time monitoring	
adjustable	Yes
Digital inputs	
Number of digital inputs	8 ; Integrated
of which, inputs usable for technological functions	4 ; HSC (High Speed Counting)

m/p-reading	Yes
Number of simultaneously controllable inputs [nicht versorgt: TAK_ABP289_001_000]	
Number of simultaneously controllable inputs, up to 40 °C	8
Input voltage	
Rated value, DC	24 V
for signal "0"	5 VDC at 1 mA
for signal "1"	15 VDC at 2.5 mA
Input current	
for signal "1", typ.	1 mA
Input delay (for rated value of input voltage) for standard inputs	
programmable	0.2, 0.4, 0.8, 1.6, 3.2, 6.4, 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	
programmable	Yes
Cable length	
cable length, shielded, max.	500 m ; 50 m for technological functions
Cable length unshielded, max.	300 m ; For technological functions: No
Digital outputs	
Number of digital outputs	6 ; Relay
Short-circuit protection of the output	No ; to be provided externally
Switching capacity of the outputs	
with resistive load, max.	2 A
on lamp load, max.	30 W DC; 200 W 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
Cable length	
cable length, shielded, max.	500 m
Cable length unshielded, max.	150 m

Relay outputs

Number of relay outputs	6
Number of operating cycles	mechanically 10 million, at rated load voltage 100,000

Analog inputs

Number of analog inputs	2
cable length, shielded, max.	100 m ; twisted and shielded
Voltage	Yes
Input ranges (rated values), voltages	
0 to +10 V	Yes
Input resistance (0 to 10 V)	100k ohms

Analog value creation

Integration and conversion time/resolution per channel	
Resolution with overload area (bit including sign), max.	10 bit
Integration time, parameterizable	Yes
Conversion time (per channel)	625 μ s

Encoder supply

24 V encoder supply	
24 V	permissible range: 20.4 to 28.8 V

Encoder

Connectable encoders

2-wire BEROs	Yes
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Integrated Functions

Number of counters	4
Counter frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
PID controller	Yes

Number of alarm inputs	4
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Isolation

Galvanic isolation, digital inputs

galvanic isolation, digital inputs	500 VAC for 1 minute
between the channels, in groups of	1

Isolation, digital outputs

Galvanic isolation, digital outputs	Yes ; Relays
between the channels	No

between the channels, in groups of	2
Permissible potential difference	
between different circuits	500 VDC between 24 VDC and 5 VDC
EMC	
Interference immunity against discharge of static electricity	
Interference immunity against discharge of static electricity to IEC 61000-4-2	Yes
Interference immunity to cable-borne interference on the supply lines to IEC 61000-4-4	Yes
Interference immunity on signal lines to IEC 61000-4-4	Yes
on the supply lines to IEC 61000-4-5	Yes
Interference immunity against high frequency radiation to IEC 61000-4-6	Yes
Emission of radio interferences to EN 55 011 (limit class A)	Yes ; Group 1
Emission of radio interference to EN 55 011 (limit class B)	Yes
Environmental requirements	
Operating temperature	
min.	0 °C
max.	55 °C
vertical installation, min.	0 °C
vertical installation, max.	45 °C
horizontal installation, min.	0 °C
horizontal installation, max.	55 °C
Storage/transport temperature	
min.	-40 °C
max.	70 °C
Air pressure	
Operation, min.	795 hPa
Operation, max.	1080 hPa
Storage/transport, min.	660 hPa
Storage/transport, max.	1080 hPa
Relative humidity	
Operation, max.	95 % ; no condensation

Vibrations	
Vibrations	2G panel mount, 1G DIN rail mount
Operation checked according to IEC 60068-2-6	Yes
Shock test	
checked according to IEC 60068-2-27	Yes ; 15 G, 11 ms pulse, 6 shocks in each of 3 axes
Degree of protection	
IP 20	Yes
Standards, approvals, certificates	
CE symbol	Yes
C-TICK	Yes
cULus	Yes
FM approval	Yes
Dimensions and weight	
Dimensions and weight	
Width	90 mm
Height	100 mm
Depth	75 mm
Weight	
Weight, approx.	425 g
Status	Dec 4, 2009