

# SIEMENS

## Product data sheet

**6ES7215-1HG31-0XB0**


SIMATIC S7-1200, CPU 1215C,  
 COMPACT CPU, DC/DC/RELAY,  
 2 PROFINET PORT,  
 ONBOARD I/O: 14 DI 24V DC;  
 10 DO RELAY 2A, 2 AI 0-10V DC,  
 2 AO 0-20MA DC,  
 POWER SUPPLY: DC 20,4 -28,8 V DC,  
 PROGRAM/DATA MEMORY: 100 KB

General information	
Engineering with	
Programming package	As of STEP 7 V11.0 SP2
Supply voltage	
24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
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)	500 mA ; Typical
Current consumption, max.	1500 A ; 24 V DC
Inrush current, max.	12 A ; at 28.8 V DC

<b>Output current</b>	
Current output to backplane bus (DC 5 V), max.	1600 mA ; Max. 5 V DC for SM and CM
<b>Power losses</b>	
Power loss, typ.	12 W
<b>Memory</b>	
Usable memory for user data	100 kbyte
<b>Work memory</b>	
integrated	100 kbyte
expandable	No
<b>Load memory</b>	
integrated	4 Mbyte
<b>Backup</b>	
present	Yes ; (maintenance-free)
without battery	Yes
<b>CPU processing times</b>	
for bit operations, min.	0.085 $\mu$ s ; / instruction
for word operations, min.	1.7 $\mu$ s ; / instruction
for floating point arithmetic, min.	2.5 $\mu$ s ; / instruction
<b>CPU-blocks</b>	
Number of blocks (total)	DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used
<b>OB</b>	
Number, max.	Limited only by RAM for code
<b>Data areas and their retentivity</b>	
retentive data area in total (incl. times, counters, flags), max.	10 kbyte
<b>Flag</b>	
Number, max.	8 kbyte ; Size of bit memory address area
<b>Address area</b>	
<b>I/O address area</b>	
I/O address area, overall	1024 bytes for inputs / 1024 bytes for outputs
<b>Process image</b>	

Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
<b>Hardware configuration</b>	
Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
<b>Time of day</b>	
<b>Clock</b>	
Hardware clock (real-time clock)	Yes
Deviation per day, max.	+/- 60 s/month at 25 °C
Backup time	480 h ; Typical
<b>Digital inputs</b>	
Number/binary inputs	14 ; integrated
of which, inputs usable for technological functions	6 ; HSC (High Speed Counting)
integrated channels (DI)	14
m/p-reading	Yes
<b>Number of simultaneously controllable inputs</b>	
all mounting positions	
up to 40 °C, max.	14
<b>Input voltage</b>	
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 "1", typ.	1 mA
<b>Input delay (for rated value of input voltage)</b>	
for standard inputs	
Parameterizable	Yes ; 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	
Parameterizable	Yes
for counter/technological functions	
Parameterizable	Yes ; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz

<b>Cable length</b>	
Cable length, shielded, max.	500 m ; 50 m for technological functions
Cable length unshielded, max.	300 m ; For technological functions: No
<b>Digital outputs</b>	
Number/binary outputs	10 ; Relay
integrated channels (DO)	10
Functionality/short-circuit strength	No ; to be provided externally
<b>Switching capacity of the outputs</b>	
with resistive load, max.	2 A
on lamp load, max.	30 W DC; 200 W 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	10
Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100,000
<b>Cable length</b>	
Cable length, shielded, max.	500 m
Cable length unshielded, max.	150 m
<b>Analog inputs</b>	
Integrated channels (AI)	2 ; 0 to 10 V
Number of analog inputs	2
<b>Input ranges</b>	
Voltage	Yes
<b>Input ranges (rated values), voltages</b>	
0 to +10 V	Yes
Input resistance (0 to 10 V)	≥100k ohms
<b>Cable length</b>	
Cable length, shielded, max.	100 m ; twisted and shielded
<b>Analog outputs</b>	
Integrated channels (AO)	2 ; 0 to 20mA

Number of analog outputs	2
<b>Cable length</b>	
Cable length, shielded, max.	100 m ; Shielded, twisted wire pair
<b>Analog value creation</b>	
<b>Integrations and conversion time/ resolution per channel</b>	
Resolution with overrange (bit including sign), max.	10 bit
Integration time, parameterizable	Yes
Conversion time (per channel)	625 µs
<b>Encoder</b>	
<b>Connectable encoders</b>	
2-wire sensor	Yes
<b>1st interface</b>	
Type of interface	PROFINET
Physics	Ethernet
Isolated	Yes
Automatic detection of transmission speed	Yes
Autonegotiation	Yes
Autocrossing	Yes
<b>Functionality</b>	
PROFINET IO Controller	Yes
<b>2nd interface</b>	
<b>DP master</b>	
<b>Services</b>	
S7 communication	Yes
<b>Communication functions</b>	
<b>S7 communication</b>	
supported	Yes
as server	Yes
as client	Yes
<b>Open IE communication</b>	
TCP/IP	Yes
ISO-on-TCP (RFC1006)	Yes
UDP	Yes

<b>Web server</b>	
supported	Yes
User-defined websites	Yes
<b>Test commissioning functions</b>	
<b>Status/control</b>	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
<b>Forcing</b>	
Forcing	Yes
<b>Diagnostic buffer</b>	
present	Yes
<b>Integrated Functions</b>	
Number of counters	6
Counter frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
<b>Galvanic isolation</b>	
<b>Galvanic isolation digital inputs</b>	
Galvanic isolation digital inputs	500 V AC for 1 minute
between the channels, in groups of	1
<b>Galvanic isolation digital outputs</b>	
Galvanic isolation digital outputs	Relay
between the channels	No
<b>Permissible potential difference</b>	
between different circuits	500 V DC between 24 V DC and 5 V DC
<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	6 kV
<b>Interference immunity to cable-borne interference</b>	
on the supply lines acc. to IEC 61000-4-4	Yes
Interference immunity on signal lines acc. to IEC 61000-4-4	Yes
<b>Surge immunity</b>	
on the supply lines acc. to IEC 61000-4-5	Yes
<b>Immunity against conducted interference induced by high-frequency fields</b>	
Interference immunity against high-frequency radiation acc. to IEC 61000-4-6	Yes
<b>Emission of radio interference acc. to EN 55 011</b>	
Emission of radio interferences acc. to EN 55 011 (limit class A)	Yes ; Group 1
Emission of radio interference acc. to EN 55 011 (limit class B)	Yes ; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011
<b>Degree and class of protection</b>	
IP20	Yes
<b>Standards, approvals, certificates</b>	
CE mark	Yes
CSA approval	Yes
UL approval	Yes
cULus	Yes
C-TICK	Yes
FM approval	Yes
Marine approval	Yes
<b>Ambient conditions</b>	
<b>Operating temperature</b>	
Min.	-20 °C
max.	60 °C
vertical installation, min.	-20 °C
vertical installation, max.	50 °C
horizontal installation, min.	-20 °C
horizontal installation, max.	60 °C
<b>Storage/transport temperature</b>	

Min.	-40 °C
max.	70 °C
<b>Air pressure</b>	
Operation, min.	795 hPa
Operation, max.	1080 hPa
Storage/transport, min.	660 hPa
Storage/transport, max.	1080 hPa
<b>Relative humidity</b>	
Operation, max.	95 % ; no condensation
<b>Vibrations</b>	
Vibrations	2G wall mounting, 1G DIN rail
Operation, checked according to IEC 60068-2-6	Yes
<b>Shock test</b>	
checked according to IEC 60068-2-27	Yes ; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
<b>Climatic and mechanical conditions for storage and transport</b>	
<b>Climatic conditions for storage and transport</b>	
<b>Free fall</b>	
Drop height, max. (in packaging)	0.3 m ; five times, in dispatch package
<b>Temperature</b>	
Permissible temperature range	-40 °C to +70 °C
<b>Mechanical and climatic conditions during operation</b>	
<b>Climatic conditions in operation</b>	
<b>Temperature</b>	
Min.	-20 °C
max.	60 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
Permissible air pressure	1080 to 795 hPa
Permissible operating height	-1000 to 2000 m
<b>Pollutant concentrations</b>	
SO <sub>2</sub> at RH < 60% without condensation	SO <sub>2</sub> : < 0.5 ppm; H <sub>2</sub> S: < 0.1 ppm; RH < 60% condensation-free
<b>Configuration</b>	
programming	



Programming language	
LAD	Yes
FBD	Yes
SCL	Yes
Cycle time monitoring	
adjustable	Yes
Dimensions	
Width	130 mm
Height	100 mm
Depth	75 mm
Weight	
Weight, approx.	585 g
Status	Jul 17, 2012