SIEMENS

Data sheet

SIMATIC S7-1200, CPU 1215C, compact CPU, DC/DC/DC, 2 PROFINET ports, onboard I/O: 14 DI 24 V DC; 10 DO 24 V DC; 0.5 A; 2 AI 0-10 V DC, 2 AO 0-20 mA DC, power supply: DC 20.4-28.8 V DC, program/data memory 200 KB



Figure similar

1	
General information	
Product type designation	CPU 1215C DC/DC/DC
Firmware version	V4.6
Engineering with	
Programming package	STEP 7 V18 or higher
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Load voltage L+	
 Rated value (DC) 	24 V
 permissible range, lower limit (DC) 	20.4 V
 permissible range, upper limit (DC) 	28.8 V
Input current	
Current consumption (rated value)	500 mA; CPU only
Current consumption, max.	1 500 mA; CPU with all expansion modules
Inrush current, max.	12 A; at 28.8 V DC
l²t	0.5 A ² ·s
Output current	
for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
Encoder supply	
24 V encoder supply	
• 24 V	L+ minus 4 V DC min.
Power loss	
Power loss, typ.	12 W
Memory	
Work memory	
• integrated	200 kbyte
Load memory	
• integrated	4 Mbyte
 Plug-in (SIMATIC Memory Card), max. 	with SIMATIC memory card
Backup	
• present	Yes
maintenance-free	Yes
without battery	Yes
CPU processing times	
for bit operations, typ.	0.08 μs; / instruction

for word appretians, type	1.7 up: / instruction
for word operations, typ.	1.7 μs; / instruction
for floating point arithmetic, typ.	2.3 µs; / instruction
CPU-blocks	
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
OB	
Number, max.	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	14 kbyte
Flag	
• Size, max.	8 kbyte; Size of bit memory address area
Local data	
per priority class, max.	16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB
Address area	
Process image	
Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
Hardware configuration	
Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
Time of day	5 comm. modulos, i olyma board, o olyma modules
Clock	
	Voo
Hardware clock (real-time) Reality time	Yes
Backup time Deviation per day, may	480 h; Typical ±60 s/month at 25 °C
Deviation per day, max. Digital inputs	±00 \$/III0IItii at 25 °C
Digital inputs	
Number of digital inputs	14; Integrated
of which inputs usable for technological functions	6; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	14
Input voltage	
Rated value (DC)	24 V
• for signal "0"	5 V DC at 1 mA
• for signal "1"	15 V DC at 2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
— at "0" to "1", min.	0.2 ms
— at 0 to 1, min. — at "0" to "1". max.	12.8 ms
·	12.0 1115
for interrupt inputs	Voc
— parameterizable	Yes
for technological functions	Single phase: 3 @ 100 kHz 9 2 @ 20 kHz differential: 2 @ 90 kHz 9 2 @ 20
— parameterizable	Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz
Cable length	
shielded, max.	500 m; 50 m for technological functions
• unshielded, max.	300 m; for technological functions: No
Digital outputs	
Number of digital outputs	10
of which high-speed outputs	4; 100 kHz Pulse Train Output
Limitation of inductive shutdown voltage to	L+ (-48 V)
Switching capacity of the outputs	_ (,)
with resistive load, max.	0.5 A
on lamp load, max.	5 W
Output voltage	0.1 V: with 10 kOhm load
for signal "0", max.	0.1 V; with 10 kOhm load
• for signal "1", min.	20 V

• for signal "1" rated value or na.		
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e-"15 to "7", max. 1 µs -"15 to "7", max. 5 µs Switching frequency - of the puber outguts, with resistive load, max. - 100 Mbz - Resign outguts - Number of resign outguts - Number of resign outguts - Shielded, max. 500 m - shielded, max. 150 m - Annitog inputs - Number of readog pubs 2 - Input ranges - Voltage Yes - Input resistance (0 to 10 V) 2 - Input ranges carted values), voltages - Shielded, max. 100 m; to visited and shielded - Input resistance (0 to 10 V) 2 - Input ranges carted values), voltages - Voltage Yes - Input resistance (0 to 10 V) 2 - Input ranges carted values), voltages - Shielded, max. 100 m; to visited and shielded - Insulation of the languts - Shielded, max. 100 m; to visited and shielded - Annitog outguts - O to 20 mA Yes - Outgut ranges, current - O to 20 mA Yes - Annitog value generation for the languts - Integration time, par characterizable Yes - Convertion time (per characterizable Yes - Convertion with overrange (bit including sign), max. - Integration and conversion time-residuation per characterizable Yes - Convertion with overrange (bit including sign), max. - PROFINET (conversion Yes - Number of ports Yes - PROFINET (conversion Yes - PR	• for signal "0" residual current, max.	0.1 mA
* "It for "Or," max. * of the pulse outputs, with resistive load, max. * of the pulse outputs. * of the pulse outputs. * Number of relay outputs. * of the pulse outputs. * Number of analog inputs. * of the pulse outputs. *	Output delay with resistive load	
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Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes Interface types • RJ 45 (Ethernet) Yes • Number of ports 2 • integrated switch Yes Protocols • PROFINET IO Controller Yes • SIMATIC communication Yes • Open IE communication Yes • Media redundancy Yes • Media redundancy Yes PROFINET IO Controller • Transmission rate, max. 100 Mbit/s Services - PG/OP communication Yes; encryption with TLS V1.3 pre-selected - Isochronous mode - IRT	Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor	10 bit
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Autorossing Yes Interface types RJ 45 (Ethernet) Yes Number of ports 2 Integrated switch Yes Protocols PROFINET IO Controller Yes SIMATIC communication Yes; Optionally also encrypted Web server Yes Media redundancy Yes PROFINET IO Controller Transmission rate, max. 100 Mbit/s Services PG/OP communication Yes; encryption with TLS V1.3 pre-selected No Integrated Switch Yes	Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type	10 bit Yes PROFINET
Autocrossing Yes Interface types PJ 45 (Ethernet) Yes Integrated switch Yes Protocols PROFINET IO Controller Yes SIMATIC communication Yes; Optionally also encrypted Web server Yes Media redundancy Yes Media redundancy Yes PROFINET IO Controller Transmission rate, max. 100 Mbit/s Services PG/OP communication Yes; encryption with TLS V1.3 pre-selected No Interface types Yes No Integrated switch Yes Yes Protocols Yes PROFINET IO Controller Transmission rate, max. 100 Mbit/s Services PG/OP communication Yes; encryption with TLS V1.3 pre-selected No Interface types No	Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type	10 bit Yes PROFINET Yes
Interface types • RJ 45 (Ethernet) • Number of ports • Number of ports • integrated switch Protocols • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max. Services - PG/OP communication - Isochronous mode - IRT Yes Yes Yes Yes Yes Yes Yes Ye	Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated	10 bit Yes PROFINET Yes
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 integrated switch Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. Services PG/OP communication Yes; encryption with TLS V1.3 pre-selected No 	Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types	10 bit Yes PROFINET Yes Yes Yes Yes
Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. Services — PG/OP communication Yes; Optionally also encrypted Yes Yes Yes Yes PROFINET IO Controller Transmission rate, max. 100 Mbit/s Services — PG/OP communication Yes; encryption with TLS V1.3 pre-selected No No	Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor 1. Interface Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet)	10 bit Yes PROFINET Yes Yes Yes Yes Yes Yes
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 PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. Services PG/OP communication Isochronous mode No 	Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Encoder Connectable encoders 2-wire sensor Interface Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types RJ 45 (Ethernet) Number of ports integrated switch	10 bit Yes PROFINET Yes Yes Yes Yes Yes Yes
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Web server Media redundancy Yes PROFINET IO Controller Transmission rate, max. 100 Mbit/s Services — PG/OP communication — Isochronous mode — IRT No Yes Yes Yes Yes Yes Yes Yes Ye	Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Encoder Connectable encoders 2-wire sensor 1. Interface Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types RJ 45 (Ethernet) Number of ports integrated switch Protocols PROFINET IO Controller PROFINET IO Device	10 bit Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Ye
Media redundancy PROFINET IO Controller Transmission rate, max. 100 Mbit/s Services PG/OP communication Isochronous mode IRT No Yes Yes 100 Mbit/s No No No No No No No No No N	Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Encoder Connectable encoders 2-wire sensor Interface Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types RJ 45 (Ethernet) Number of ports integrated switch Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication	10 bit Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Ye
PROFINET IO Controller • Transmission rate, max. Services — PG/OP communication — Isochronous mode — IRT No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No	Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Encoder Connectable encoders 2-wire sensor Interface Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types RJ 45 (Ethernet) Number of ports integrated switch Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication	10 bit Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Ye
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Services - PG/OP communication - Isochronous mode - IRT Yes; encryption with TLS V1.3 pre-selected No No	Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Encoder Connectable encoders 2-wire sensor Interface Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types RJ 45 (Ethernet) Number of ports integrated switch Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy	Yes PROFINET Yes
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DDOE lenergy No.	Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Encoder Connectable encoders 2-wire sensor I. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types RJ 45 (Ethernet) Number of ports integrated switch Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. Services — PG/OP communication Isochronous mode	Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes
— PROFlenergy No	Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Encoder Connectable encoders 2-wire sensor Interface Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types RJ 45 (Ethernet) Number of ports integrated switch Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. Services — PG/OP communication — Isochronous mode — IRT	Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes

Drightized startus	Voc
— Prioritized startup	Yes 16
Number of IO devices with prioritized startup, max.	16
Number of connectable IO Devices, max.	16
Number of connectable IO Devices for RT, max. of which in line, may.	16
— of which in line, max.	
Activation/deactivation of IO Devices	Yes
 Number of IO Devices that can be simultaneously activated/deactivated, max. 	8
— Updating time	The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity
DDOFINET IO Davies	of configured user data.
PROFINET IO Device Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode	No
— IST	No
— PROFlenergy	Yes
— Profilerery — Shared device	Yes
— Shared device — Number of IO Controllers with shared device, max.	res 2
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIsafe	No
PROFIBUS	Yes; CM 1243-5 (master) or CM 1242-5 (slave) required
OPC UA	Yes: OPC UA Server
AS-Interface	Yes; CM 1243-2 required
Protocols (Ethernet)	res, CM 1245-2 required
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
	res
Redundancy mode Media redundancy	
— MRP	Yes; as MRP redundancy manager and/or MRP client
— MRPD	No
SIMATIC communication	NO
• S7 routing	Yes
Open IE communication	103
• TCP/IP	Yes
	8 kbyte
— Data length, max.	
ISO-on-TCP (RFC1006) Data length, max	Yes
— Data length, max.	8 kbyte
UDP Data length, max	Yes
— Data length, max. Web server	1 472 byte
• supported	Yes
User-defined websites	Yes
OPC UA	
Runtime license required	Yes; "Basic" license required
OPC UA Server	Yes; data access (read, write, subscribe), method call, runtime license required
Application authentication	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
— User authentication	"anonymous" or by user name & password
Number of sessions, max.	10
Number of subscriptions per session, max.	5
Sampling interval, min.	100 ms
— Publishing interval, min.	200 ms
Number of server methods, max.	20
Number of server metrious, max. Number of monitored items, recommended max.	1 000
— realiser of monitored items, recommended max.	1 000
- Number of server interfaces, may	2
Number of pades for user defined server interfaces.	2
 Number of server interfaces, max. Number of nodes for user-defined server interfaces, max. 	2 2 000

Evolton markensla	
Further protocols	Vee
MODBUS communication functions / boader	Yes
communication functions / header	
S7 communication	Ven
• supported	Yes
as server as aliant	Yes
as client	Yes
User data per job, max. Number of connections	See online help (S7 communication, user data size)
• overall	PG Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / 18 max; S7 Connections: 8 reserved / 14 max; Open User Connections: 8 reserved / 14 max; Web Connections: 2 reserved / 30 max; OPC UA Connections: 0 reserved / 10 max; Total Connections: 34 reserved / 64 max
Test commissioning functions	
Status/control	
 Status/control variable 	Yes
 Variables 	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
Forcing	Yes
Diagnostic buffer	
• present	Yes
Traces	
 Number of configurable Traces 	2
 Memory size per trace, max. 	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
Integrated Functions	
Frequency measurement	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	4; With integrated outputs
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
Limit frequency (pulse)	100 kHz
Potential separation	
Potential separation digital inputs	
Potential separation digital inputs	No
 between the channels, in groups of 	1
Potential separation digital outputs	
Potential separation digital outputs	Yes
 between the channels 	No
 between the channels, in groups of 	1
EMC	
Interference immunity against discharge of static electricity	
Interference immunity against discharge of static	Yes
electricity acc. to IEC 61000-4-2	
 Test voltage at air discharge 	8 kV
Test voltage at contact discharge	6 kV
Interference immunity to cable-borne interference	
Interference immunity on supply lines acc. to IEC 61000-4-4	Yes
Interference immunity on signal cables acc. to IEC 61000-4-4 Let ference immunity on signal cables acc. to IEC 61000-4-4 Let ference immunity on signal cables acc. to IEC 61000-4-4	Yes
Interference immunity against voltage surge	V
Interference immunity on supply lines acc. to IEC 61000-4-5 Interference immunity against conducted variable disturbance industry.	Yes
Interference immunity against conducted variable disturbance indu	
 Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 	Yes

Emission of radio interference acc. to EN 55 011	
• Limit class A, for use in industrial areas	Yes; Group 1
• Limit class B, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011
Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	Yes
Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	-20 °C
• min.	-20 °C 60 °C; Number of simultaneously activated inputs or outputs 7 or 5 (no adjacent
• max.	points) at 60 °C horizontal or 50 °C vertical, 14 or 10 at 55 °C horizontal or 45 °C vertical
horizontal installation, min.	-20 °C
horizontal installation, max.	60 °C
vertical installation, min.	-20 °C
 vertical installation, max. 	50 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
Operation, min.	795 hPa
Operation, max.	1 080 hPa
 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.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Relative humidity	
Operation, max.	95 %; no condensation
Vibrations	
 Vibration resistance during operation acc. to IEC 60068- 2-6 	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
 Operation, tested according to IEC 60068-2-6 	Yes
Shock testing	
• tested 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
Pollutant concentrations	
SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
configuration / header	
configuration / programming / header	
Programming language	v
— LAD	Yes
— FBD	Yes
— SCL	Yes
Know-how protection	Vac
User program protection/password protection	Yes
Copy protection Plant grantation	Yes
Block protection	Yes
Access protection	Voc
protection of confidential configuration data Destruction levels Write protection	Yes
Protection level: Write protection Protection level: Pood/write protection	Yes
Protection level: Read/write protection	Yes

 Protection level: Complete protection 	Yes
programming / cycle time monitoring / header	
adjustable	Yes
Dimensions	
Width	130 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	500 g

last modified:

3/12/2024