SIEMENS

Data sheet

6ES7215-1AG40-0XB0

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

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 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	T NUYLE
	O server madulas d simplificand O simplificadulas
Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
Time of day	
Clock	
 Hardware clock (real-time) 	Yes
Backup time	480 h; Typical
 Deviation per day, max. 	±60 s/month 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)	15 V DC at 2.5 mA
	15 V DC at 2.5 mA
Input delay (for rated value of input voltage)	15 V DC at 2.5 mA 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
Input delay (for rated value of input voltage) for standard inputs	0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in
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
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min.	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 0.2 ms
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max.	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 0.2 ms
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs	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 0.2 ms 12.8 ms
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt 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 0.2 ms 12.8 ms
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions	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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions — 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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30
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Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions — parameterizable Cable length • shielded, max. • unshielded, max.	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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz KHz
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions — parameterizable Cable length • shielded, max. • unshielded, max.	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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz KHz
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions — parameterizable Cable length • shielded, max. • unshielded, max. Digital outputs	 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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz 500 m; 50 m for technological functions 300 m; for technological functions: No
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions — parameterizable Cable length • shielded, max. • unshielded, max. Digital outputs Number of digital outputs	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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz 500 m; 50 m for technological functions 300 m; for technological functions: No
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions — parameterizable Cable length • shielded, max. • unshielded, max. • Digital outputs Number of digital outputs • of which high-speed outputs	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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz 500 m; 50 m for technological functions 300 m; for technological functions: No
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions — parameterizable Cable length • shielded, max. • unshielded, max. • unshielded, max. Digital outputs • of which high-speed outputs Limitation of inductive shutdown voltage to	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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz 500 m; 50 m for technological functions 300 m; for technological functions: No
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions — parameterizable Cable length • shielded, max. • unshielded, max. Digital outputs Number of digital outputs • of which high-speed outputs Limitation of inductive shutdown voltage to Switching capacity of the outputs	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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz 500 m; 50 m for technological functions 300 m; for technological functions: No 10 4; 100 kHz Pulse Train Output L+ (-48 V)
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions — parameterizable Cable length • shielded, max. • unshielded, max. • unshielded, max. Digital outputs • of which high-speed outputs Limitation of inductive shutdown voltage to Switching capacity of the outputs • with resistive load, max. • on lamp load, max.	 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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz 500 m; 50 m for technological functions 300 m; for technological functions: No 10 4; 100 kHz Pulse Train Output L+ (-48 V) 0.5 A
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions — parameterizable Cable length • shielded, max. • unshielded, max. • unshielded, max. • unshielded, max. Initiation of inductive shutdown voltage to Switching capacity of the outputs • with resistive load, max. • on lamp load, max. Output voltage	 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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz 500 m; 50 m for technological functions 300 m; for technological functions: No 10 4; 100 kHz Pulse Train Output L+ (-48 V) 0.5 A
Input delay (for rated value of input voltage) for standard inputs — parameterizable — at "0" to "1", min. — at "0" to "1", max. for interrupt inputs — parameterizable for technological functions — parameterizable Cable length • shielded, max. • unshielded, max. • unshielded, max. Digital outputs • of which high-speed outputs Limitation of inductive shutdown voltage to Switching capacity of the outputs • with resistive load, max. • on lamp load, max.	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 0.2 ms 12.8 ms Yes Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz 500 m; 50 m for technological functions 300 m; for technological functions: No 10 4; 100 kHz Pulse Train Output L+ (-48 V) 0.5 A 5 W

6 • • • • • • •	0.5.4
• for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.1 mA
Output delay with resistive load	
• "0" to "1", max.	1 µs
• "1" to "0", max.	5 µs
Switching frequency	
 of the pulse outputs, with resistive load, max. 	100 kHz
Relay outputs	
Number of relay outputs	0
Cable length	
 shielded, max. 	500 m
 unshielded, max. 	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	
Voltage	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
— Input resistance (0 to 10 V)	≥100k ohms
Cable length	
• shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	2
Output ranges, current	
• 0 to 20 mA	Yes
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
 Resolution with overrange (bit including sign), max. 	10 bit
 Integration time, parameterizable 	Yes
 Conversion time (per channel) 	625 µs
Analog value generation for the outputs	
Analog value generation for the outputs	10 bit
Analog value generation for the outputs Integration and conversion time/resolution per channel	10 bit
Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.	10 bit
Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders	10 bit 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	
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	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	Yes PROFINET
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	Yes PROFINET 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 I. Interface Interface type Isolated automatic detection of transmission rate	Yes PROFINET Yes Yes
Analog value generation for the outputs Integration and conversion time/resolution per channel	Yes PROFINET Yes Yes 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 Isolated automatic detection of transmission rate Autoregotiation Autocrossing	Yes PROFINET Yes 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 Isolated automatic detection of transmission rate Autorcossing Interface types	Yes PROFINET Yes Yes Yes Yes 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 Isolated automatic detection of transmission rate Autocrossing Interface types • RJ 45 (Ethernet)	Yes PROFINET Yes Yes Yes Yes Yes Yes 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 Isolated automatic detection of transmission rate Autoregotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports	Yes PROFINET Yes Yes Yes Yes Yes Yes 2
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 Autoregotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch	Yes PROFINET Yes Yes Yes Yes Yes Yes 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 Isolated automatic detection of transmission rate Autorogotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols	Yes PROFINET 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 Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols • PROFINET IO Controller	Yes PROFINET 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 Isolated automatic detection of transmission rate Autorossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols • PROFINET IO Controller • PROFINET IO Device	Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Yes 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 Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Integrated switch Protocols • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication	Yes PROFINET 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 Isolated automatic detection of transmission rate Autoregotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication	Yes PROFINET 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 Isolated automatic detection of transmission rate Autorossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Web server	Yes PROFINET 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 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 • Web server • Media redundancy	Yes PROFINET 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 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 • Web server • Media redundancy PROFINET IO Controller	Yes PROFINET 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 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 • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max.	Yes PROFINET 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 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 • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max. Services	Yes PROFINET 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 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 • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max. Services - PG/OP communication	Yes PROFINET 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 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 • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max. Services - PG/OP communication - Isochronous mode	Yes PROFINET 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 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 • Web server • Media redundancy PROFINET IO Controller • Transmission rate, max. Services - PG/OP communication	Yes PROFINET Yes

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- Number of conceptibe I/O Devices for RT, max.6- Activation/district of I/O DevicesYes- Number of I/O DevicesYes- Number of I/O Devices intal can be simulineously8- Updating timeThe minimum relate of the update time also dynamics on the communication of component are for PROFINET I/O on the number of I/O devices and this quanty of component are for PROFINET I/O and the number of I/O devices and this quanty of component are for PROFINET I/O and the number of I/O devices and this quanty of component are for PROFINET I/O and the number of I/O devices and this quanty of component are for PROFINET I/O and the number of I/O devices and this quanty of component are for PROFINET I/O and the number of I/O devices and this quanty of component are for PROFINET I/O and the number of I/O devices and this quanty of component are for PROFINET I/O and the number of I/O devices and this quanty of component are for PROFINET I/O and the number of I/O devices and this quanty of Component are for PROFINET I/O and the number of I/O devices and this quanty of Component are for PROFINET I/O and the number of I/O devices and this quanty of Component are for PROFINET I/O and the number of I/O devices and this quanty of Component are for PROFINET I/O and the number of I/O devices and this quanty of Component are for PROFINET I/O and the number of I/O devices and this quanty of Component are for PROFINET I/O and the number of I/O devices and this quanty of Component are for PROFINET I/O and the number of I/O devices and this quanty of Component are for PROFINET I/O and the number of I/O devices are for PROFINET I/O device are for PROFINET I/O devices		
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actuated/deactures, nax. Updating time Updating t	 Activation/deactivation of IO Devices 	Yes
		8
companent set for PROFINET IO, on the number of IO devices and the quantity of compared user data. PROFINET IO Device Services - PGOP communication Yes, encryption with TLS V1.3 pro-selected - HAT No PROFISIO Yes - Number of IO Controllers with shared device, max. 2 PROFISIO Yes OPCUA Yes (CM 1243-2 (slave) required OPCUA Yes (CM 1243-2 (required As Interface Yes (CM 1243-2 (slave) required OPCUA Yes - IOPIP		
Services - PGC0P communication No - IsoCharonus mode No - IRT No - PROFInengy Yes - Shard device Yes - Shard device Yes - Number of IO Controllers with shared device, max. 2 PROFIse No Supports protocol for PROFINET IO Yes PROFISE No PROFISE Yes; CM 12432 (master) or CM 1242.5 (slave) required OPCUA Yes; CM 12432 (master) or CM 1242.5 (slave) required PROFISE Yes; CM 12432 (master) or CM 1242.5 (slave) required OPCUA Yes; CM 12432 (master) or CM 1242.5 (slave) required Protocols Yes; CM 12432 (master) or CM 1242.5 (slave) required PROFINET Yes; CM 12432 (master) or CM 1242.5 (slave) required Protocols Yes; CM 12432 (master) or CM 1242.5 (slave) required Protocols Yes; CM 12432	— Updating time	component set for PROFINET IO, on the number of IO devices and the quantity
- PG/0P communication Yes; encryption with TLS V1.3 pre-selected - Isochtronous mode No - Isochtronous mode No - PROFILE No - PROFILE Yes - Stand davice Yes - Number of IO Controllers with shared device, max. 2 Protocols Yes PROFILES Yes; CM 1243-5 (master) or CM 1242-5 (slave) required PROFILES Yes; CM 1243-2 (master) or CM 1242-5 (slave) required OPC UA Yes; CM 1243-2 required Protocols (Ethernot) Yes; CM 1243-2 required • DFCP No • OFCP Yes; as MRP redundancy manager and/or MRP client • OFCP Yes; as MRP redundancy manager and/or MRP client • MRPD No Stratutic communication Yes; as MRP redundancy manager and/or MRP client • OR Yes; as MRP redundancy manager and/or MRP client • OR No Stratutic communication Yes	PROFINET IO Device	
− solutions made No − IRT No − IRT No − PROFIentry Yes − Shared davice Yes − Number of IO Controllers with shared device, max. 2 Protects 2 Supports protocol for PROFINET IO Yes Protects Yes; CM 1243-5 (matter) or CM 1242-5 (slave) required OPC UA Yes; CM 1243-2 (required Protects Yes; CM 1243-2 (required Protects Yes; CM 1243-2 (required Protects Yes; CM 1243-2 (required Protects (Etherne) Yes; CM 1243-2 (required • TOPIP Yes; CM 1243-2 (required Protects (Etherne) Yes; CM 1243-2 (required • TOPIP Yes; CM 1243-2 (required • TOPIP Yes; CM 1243-2 (required • TOPIP Yes; CM 1245-2 (required • NRP Yes • DOLP Yes • DOLP Yes; CM 1245-2 (required • NRP Yes; CM 1245-2 (required • NRP Yes; CM 1245-2 (required • DOLP <td< td=""><td>Services</td><td></td></td<>	Services	
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	— Isochronous mode	No
Shared davide Yes - Number of ID Controllers with shared device, max. 2 Supports protocol for PROFINET IO Yes PROFIsade No PROFISade Yes; CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA Yes; CM 1243-2 required AS-Interface Yes; CM 1243-2 required Protocols (Ethernet) Yes • TCP/IP Yes • DACP No • SMMP Yes • DACP No • SMMP Yes • DCP Yes • DRO (MRD Yes • DATIO communication Yes • TCP/IP Yes • Data length, max. 8 ktyte • DDP Yes • Data length, max. 8 ktyte • UDP Yes • Data length, max. 1472 byte Web server Yes: 'Bas	— IRT	No
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OPC UA Yes; OPC UA Server AS-Interface Yes; CM 1245-2 required Protocols (Ethernet) * • TCP/IP Yes • DHCP No • SNMP Yes • DCP Yes • DCP Yes • Edundancy mode * Media redundancy * - MRP Yes; as MRP redundancy manager and/or MRP client - MRPD No SIMATIC communication * • ST routing Yes Open IE communication * • TCP/IP Yes - Data length, max. 8 kbyte • UDP Yes - Data length, max. 1472 byte Web server * • Supported Yes OPC UA Yes: data access (read, write, subscribe), method call, runtime license required Application authentication * * CDC UA Server Yes; data access (read, write, subscribe), method call, runtime license required Application authentication *anonymous* or by user name & password - Number of subscriptions per session, max. 5 - Sampling interval, min. 100 ms - Number of nonicoted tems, recommended max. 1000 - Number of nonitored items, recommended max.		
AS-Interface Yes; CM 1243-2 required Protocods (Ethernet) * • TCP/IP Yes • DHCP No • SIMMP Yes • DCP Yes • LLDP Yes • MRP Yes; as MRP redundancy manager and/or MRP client - MRP Yes; as MRP redundancy manager and/or MRP client - MRPD No SIMATIC communication * • ST routing Yes Open IE communication * • TCP/IP Yes - Data length, max. 8 ktyte • ISO-on-TCP (RFC1006) Yes - Data length, max. 8 ktyte • UDP Yes - Data length, max. 1472 byte Web server Yes • UDP Yes • Runtime license required Yes; "Basic" license required • OPC UA Yes • USer-defined websites Yes OPC UA Yes; "Basic" license required • User defined websites Yes OPC UA Yes; data access (read, write, subscribe), method call, runtime license required <td></td> <td></td>		
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• SNMPYes• DCPYes• LLDPYesRedundancy mode///////////////////////////////		
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SIMATIC communication • S7 routing Yes Open IE communication ************************************		
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— Publishing interval, min.200 ms— Number of server methods, max.20— Number of monitored items, recommended max.1 000— Number of server interfaces, max.2— Number of nodes for user-defined server interfaces,2 000	- Number of subscriptions per session, max.	5
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Number of monitored items, recommended max.1 000 Number of server interfaces, max.2 Number of nodes for user-defined server interfaces,2 000	-	20
— Number of server interfaces, max. 2 — Number of nodes for user-defined server interfaces, 2 000		1 000
— Number of nodes for user-defined server interfaces, 2 000		
	max.	

Further protocols	
MODBUS	Yes
communication functions / header	
S7 communication	
supported	Yes
• as server	Yes
• as client	Yes
• User data per job, max.	See online help (S7 communication, user data size)
Number of connections	
• 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 electricity acc. to IEC 61000-4-2	Yes
— 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 	Yes
Interference immunity against voltage surge	
 Interference immunity on supply lines acc. to IEC 61000- 4-5 	Yes
Interference immunity against conducted variable disturbance indu	ced by high-frequency fields
 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	
min.	-20 °C
• max.	60 °C; Number of simultaneously activated inputs or outputs 7 or 5 (no adjacent 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/s ²) wall mounting, 1 g (m/s ²) 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	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Know-how protection	
User program protection/password protection	Yes
Copy protection	Yes
Block protection	Yes
Access protection	
 protection of confidential configuration data 	Yes
Protection level: 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

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