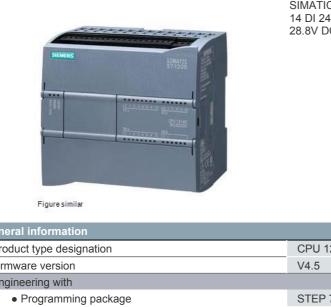
SIEMENS

Data sheet

6ES7214-1AG40-0XB0



SIMATIC S7-1200, CPU 1214C, compact CPU, DC/DC/DC, onboard I/O: 14 DI 24 V DC; 10 DO 24 V DC; 2 AI 0-10 V DC, Power supply: DC 20.4-28.8V DC, Program/data memory 100 KB

Figure similar	
General information	N
Product type designation	CPU 1214C DC/DC/DC
Firmware version	V4.5
Engineering with	
Programming package	STEP 7 V17 or higher
Supply voltage	
Rated value (DC)	- Ar
• 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
² t	0.5 A²·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	100 kbyte
expandable	No
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	
Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
Time of day	
Clock	6
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) • for signal "0" • for signal "1"	
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", max.	12.8 ms
for interrupt inputs	
— parameterizable	Yes
for technological functions	
— 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	
Output voltage	0.1 \/; with 10 kOhm load
• for signal "0", max.	0.1 V; with 10 kOhm load 20 V
• for signal "1", min.	20 V
Output current	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	0
Analog value generation for the inputs	
	<u>/</u>
Integration and conversion time/resolution per channel	
- Deselution with overrange (bit including sign) may	10 bit
Resolution with overrange (bit including sign), max.	10 bit
Integration time, parameterizable	Yes
Integration time, parameterizableConversion time (per channel)	
Integration time, parameterizable Conversion time (per channel) Encoder	Yes
Integration time, parameterizableConversion time (per channel)	Yes 625 µs
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders 2-wire sensor	Yes
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders	Yes 625 µs
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders 2-wire sensor	Yes 625 µs
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders 2-wire sensor 1. Interface	Yes 625 µs Yes
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders 2-wire sensor I. Interface Interface type	Yes 625 µs Yes PROFINET
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders 2-wire sensor I. Interface Interface type Isolated	Yes 625 µs Yes PROFINET Yes
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders 2-wire sensor Interface Interface type Isolated automatic detection of transmission rate	Yes Yes PROFINET Yes Yes
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders 2-wire sensor I. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation	Yes Yes PROFINET Yes Yes Yes
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor I. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing	Yes Yes PROFINET Yes Yes Yes
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor Interface Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types	Yes Yes PROFINET Yes Yes Yes Yes
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders Outer sensor Interface Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types RJ 45 (Ethernet)	Yes Yes PROFINET Yes Yes Yes Yes Yes
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders 2-wire sensor Interface Interface Interface Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types RJ 45 (Ethernet) Number of ports	Yes Yes PROFINET Yes Yes Yes Yes Yes Yes Yes
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders Outer sensor Interface Interface Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types RJ 45 (Ethernet) Number of ports integrated switch	Yes Yes PROFINET Yes Yes Yes Yes Yes Yes Yes
Integration time, parameterizable Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor Interface Interface Interface Interface Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols	Yes Yes PROFINET Yes Yes Yes Yes Yes 1 No
Integration time, parameterizable Conversion time (per channel) 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	Yes 225 µs Yes PROFINET Yes Yes Yes Yes 1 No Yes
Integration time, parameterizable Conversion time (per channel) 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	Yes Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
Integration time, parameterizable Conversion time (per channel) 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	Yes Yes Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
 Integration time, parameterizable Conversion time (per channel) 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 Open IE communication Web server 	Yes Yes Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
 Integration time, parameterizable Conversion time (per channel) 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 Open IE communication Web server Media redundancy 	Yes Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
 Integration time, parameterizable Conversion time (per channel) 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 SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller	Yes Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
 Integration time, parameterizable Conversion time (per channel) 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 Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. 	Yes Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
 Integration time, parameterizable Conversion time (per channel) 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 Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. Services 	Yes Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
 Integration time, parameterizable Conversion time (per channel) 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 SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. Services - PG/OP communication 	Yes Yes PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
 Integration time, parameterizable Conversion time (per channel) 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 Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. Services PG/OP communication Usechronous mode 	Yes Yes PROFINET Yes Yes Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes
 Integration time, parameterizable Conversion time (per channel) 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 Open IE communication Web server Media redundancy PROFINET IO Controller Transmission rate, max. Services - PG/OP communication 	Yes Yes PROFINET Yes Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes

Profizzed startup Number of IO devices with prioritized startup, max. Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. not writch in line, max. If of writch in line, max. If writch in line, max. If writch in line, max. Writch in line, writch in line, max.		
max. Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. Auraber of Connectable IO Devices ID Devices for RT, max. Auraber of Connectable IO Devices ID Devices ID Devices for RT, max. Auraber of Connectable ID Devices ID Devices ID Devices for RT, max. Auraber of Connectable ID Devices ID	— Prioritized startup	Yes
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 - Number of connectable I/O Devices for RT, mex. - of which in line, max. - of which in line, max. - of which in line, max. - Advataddedatedwated for RCP. The minimum value of the update time also depends on the connectation components det for PRCPINET I/O, on the number of I/O devices and the quantity of configured user data. - PrCOP communication - Brand device - Shared file - Shared device - Shared de		
max.	 — Number of connectable IO Devices, max. 	16
	 — Number of connectable IO Devices for RT, 	16
Advalance devices for PLOFINET IO Devices that can be assessed of the update time also depends on the communication component set for PEOFINET IO, on the number of IO devices and the quantity of configured user data. PROFINET IO Device PROPORET IO Device Services PROPORET IO Device Services PROPORET IO Device PROPORET IO Device Services Supports protocol for PROPINET IO PROPORE No PROPORE Services Yes, CM 1243-5 (notexer) Services Yes, CM 1243-5 (notexer) Ves, CM 1243-5 (notexer) Services Services Yes, CM 1243-8 arequired PROPORE Services Services Yes Services Yes Services Yes Services Yes Services Yes	max.	
 - Mumber of IO Devices that can be simultaneously advanted/deactivated, max. - Updating time - PG/OP communication - O cotal singth, max. - Atypic contal section - O cotal singth, max. - Atypic contal section - O cotal singth, max. - Atypic contal control contropic control control control control control control control c	— of which in line, max.	16
simultaneously activated/deactivated, max. - Updating time - PROFINET IO Device - PROFInerry - Shared device - Number of IO Controllers with shared device, - Number of Loc Controllers with shared device, - Number of Loc Controllers with shared device, - Optime - MRP - Updating time - Number of substription - Optime - MRP - Updat length, max. - Number of substription - Optime - Market - Updat length, max. - Number of substription - Optime - Update - Application authentication - Number of substription - Number of substription - Number of substription - Number of substriptions per session, max. - Number of substriptio	 Activation/deactivation of IO Devices 	Yes
simultaneously activated/deactivated, max. - Updating time -	 — Number of IO Devices that can be 	8
communication component set for PROFINET IO Device PROFINET IO Device Services PGOPC communication PGOPC communication PROFInergy ProFised PROFIsergy Pessence ProFised PROFIsergy ProFise PROFIsergy ProFise PROFIserg PROFIserg PROFIser PROFIserg PROFISER	simultaneously activated/deactivated, max.	
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PROFINET to Davice Services - PROP communication - Isochronous mode - No - PROFlenergy - Shared device Yes - Number of IO Controllers with shared device, max. PROFlanergy Yes - No Protocols Supports protocol for PROFINET IO PROFlaste No PROFlaste No PROFlaste No PROFlaste No PROFlaste No Yes: OPC UA Server AS-Interface Yes: OPC UA Server - TCP/P - TCP/P - TCP/P - TCP/P - TCP/P - TCP/P - SMMP - SMRP - SMRP - SMRP - SMRP - MRP - MRP - Data length, max. + SNote - Data length, max. + Soported - Obtal length, max. + Soported - Obtal length, max. + Stoported - Obtal length, max. + Stoported - Obtal length, max. <		
Services - PGOP communication Yes; encryption with TLS V1.3 pre-selected		devices and the quantity of configured user data.
	PROFINET IO Device	
IRT No PROFlenergy Yes Shared device 2 Number of IO Controllers with shared device, max. 2 Protocols 2 PROFlast	— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
	 — Isochronous mode 	No
Shared device, Number of IO Controllers with shared device, max. 2 Protocols	— IRT	No
Shared device, Number of IO Controllers with shared device, max. 2 Protocols		
Number of IO Controllers with shared device, max. 2 Protocol Supports protocol for PROFINET IO Yes PROFlaste No No PROFlaste Yes: CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA OPC UA Yes: CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA AS-Interface Yes: CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA AS-Interface Yes: CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA AS-Interface Yes: CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA AS-Interface Yes: CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA AS-Interface Yes: CM 1243-5 (master) or CM 1242-5 (slave) required Yes: CM 1243-5 (master) or CM 1242-5 (slave) required AS-Interface Yes: CM 1243-5 (master) or CM 1242-5 (slave) required Yes: CM 1243-5 (master) or CM 1242-5 (slave) required AS-Interface Yes: CM 1243-5 (master) or CM 1242-5 (slave) required Yes: CM 1243-5 (master) for CM		
max. Protocols Supports protocol for PROFINET IO Yes PROFIsate No PROFIBUS Yes; CM 1243-5 (naster) or CM 1242-5 (slave) required OPC UA Yes; CM 1243-5 (naster) or CM 1242-5 (slave) required PROFIBUS Yes; CM 1243-2 required Protocols (Ethernet) • (CP/IP • (CP/IP Yes • OCP Yes • DCP Yes • MRP No • MRPD No • SToruting Yes • Data length, max. 8 kbyte • ICP/IP Yes • Data length, max. 8 kbyte • UDP Yes • Data length, max. 1472 byte Web server Yes • UDP Yes • Data length, max. Yes • UDP Yes • UDP		
Protocols Supports protocol for PROFINET IO Yes PROFisate No PROFisate Yes OPC UA Yes: CM 1243-5 (naster) or CM 1242-5 (slave) required OPC UA Yes: CM 1243-3 (naster) or CM 1242-5 (slave) required Protocols (Ethernet) Yes: CM 1243-3 (naster) or CM 1242-5 (slave) required Protocols (Ethernet) Yes: CM 1243-3 (naster) or CM 1242-5 (slave) required Protocols (Ethernet) Yes: CM 1243-3 (naster) or CM 1242-5 (slave) required Protocols (Ethernet) Yes • DHCP Yes • DHCP Yes • DHCP Yes • LDP Yes Redundancy mode Yes Media redundancy No - MRP No - MRP No - Data length, max. 8 kbyte • SToruing Yes Open IE communication Yes • Data length, max. 8 kbyte • UDP Yes - Data length, max. 1472 byte Web server Yes • UDP		2
Supports protocol for PROFINET IO Yes PROFISIZE No OPC UA Yes: CM 1243-5 (ngster) or CM 1242-5 (slave) required OPC UA Yes: CM 1243-2 (required PROFIEIDS Yes: CM 1243-2 (required Protocols (Ethernet) Yes: CM 1243-2 (required • TCP/IP Yes • DHCP Yes • DCP Yes • DCP III Communication Yes • TCP/IP Yes • Data length, max. 8 kbyte • UDP Yes • Data length, max. 1472 byte Web server Supported Yes <td< td=""><td></td><td></td></td<>		
PROFIsate 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) Yes • TCP/IP Yes • DHCP Yes • DHCP Yes • DDCP Yes • LLDP Yes Media redundancy Yes - MRP No - MRP No - MRP No - Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes - Data length, max. 9 kbyte • UDP Yes - Data length, max. 1472 byte Web server Yes • UDP Yes - Data length, max. 1472 byte Ves data access (read, write, subscribe), method call, runtime license required • OPC UA Yes: 'Basic* license required • USer authentication 'Yes: 'Basic* license required • User authentication 'Yes: 'Basic* license required - Vere authentication 'anonymous* or by user name & password		Vac
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) Yes • TCP/IP Yes • DCP Yes Open IE communication Yes • TCP/IP Yes - Data length, max. 8 kbyte • UDP Yes - Data length, max. 1472 byte Web server Yes • Supported Yes • USP- defined websites Yes OPC UA Yes; "Basic" license required • Ves, data access (read, write, subscribe), method call, runtime license required • Supported Yes; data access (read, write, subscribe), method call, runtime license required		
OPC UA Yes; OPC UA Saver AS-Interface Yes; CM 1245-2 required Protocols (Ethernet) Yes • TCP/IP Yes • DPCP No • SMMP Yes • DCP Yes • LLDP Yes • MRP Yes • MRP Yes • MRP Yes • MRPD Yes • MRPD Yes • MRPD No • SIMATIC communication Yes • TCP/IP Yes • Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes • Data length, max. 8 kbyte • UDP Yes • Data length, max. 1472 byte Web server Yes • Usported Yes • User-defined websites Yes OPC UA Yes • Runtime license required Yes; 'Basic" license required • OPC UA Yes • User-defined websites Yes • DPIcation authentication Available security policies: None, Basic128Rs15, Basic256Rs15, Basic256SRs15, Basic256SRs256 • User authentication Available security policies: None, Basic128Rs15, Basic256Rs15, Basic256SRs256 • User authentication "anonymou		
AS-Interface Yes; CM 1243-2 required Protocols (Ethernet) • • TCP/IP Yes • DHCP No • SMMP Yes • DCP Yes • LLDP Yes Redundancy mode Yes Media redundancy - - MRP No - MRPD No SIMATIC communication Yes • TCP/IP Yes Open IE communication Yes • TCP/IP Yes - Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes - Data length, max. 8 kbyte • UDP Yes - Data length, max. 1472 byte Web server Yes • User-defined websites Yes OPC UA Yes • QPC UA Yes 'Basic' license required • Application authentication Available security policies: None, Basic1286Rsa15, Basic2566Rsa15, Basic2566Rsa15, Basic2568Rsa15, Basic2		
Protocols (Ethernet) Ves • TCP/IP Yes • DHCP Yes • SMMP Yes • DCP Yes Redundancy mode No — MRP No — MRPD No SIMATIC communication ************************************		
• TCP/IP Yes • DHCP No • SNMP Yes • DCP Yes • DCP Yes • LLDP Yes Redundancy mode No Media redundancy - - MRP No - MRPD No SIMATIC communication - • S7 routing Yes Open IE communication - • TCP/IP Yes - Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes - Data length, max. 8 kbyte • UDP Yes - Data length, max. 1472 byte Web server Yes • supported Yes • User-defined websites Yes OPC UA Yes; "Basic" license required • OPC UA Server Yes; "Basic" license required - Application authentication Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 - User authentication "anonymous" or by user name & password - Number of subscriptions per session, max. 10 - Number o	AS-Interface	Yes; CM 1243-2 required
OHCP No SNMP Yes DCP Yes Constrained to the second	Protocols (Ethernet)	,0
 SNMP DCP Ves LLDP Ves Redundancy mode Media redundancy - MRP No SIMATIC communication S7 routing Yes Open IE communication S7 routing Yes Open IE communication S7 routing Yes Open IE communication Yes Data length, max. 8 kbyte UDP Yes - Data length, max. 8 kbyte UDP Yes - Data length, max. 9 kbyte VDP Yes - Data length, max. 9 kbyte VDP Yes - Data length, max. 1472 byte Web server supported Yes OPC UA Ves OPC UA OPC UA OPC UA OPC UA OPC UA Server Available security policies: None, Basic128Rsa15, Basic256Rsa15, Bas	• TCP/IP	Yes
	• DHCP	No 🔨
• LLDP Yes Redundancy mode No MRP No - MRPD No SIMATIC communication Yes Open IE communication Yes - Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes - Data length, max. 8 kbyte • UDP Yes - Data length, max. 8 kbyte • UDP Yes - Data length, max. 8 kbyte • UDP Yes - Data length, max. 1472 byte Web server Yes • supported Yes • User-defined websites Yes OPC UA Yes; 'Basic' license required • OPC UA Server Yes; data access (read, write, subscribe), method call, runtime license required • OPC UA Server Yes; data access (read, write, subscribe), method call, runtime license required • OPC UA Server Yes; data access (read, write, subscribe), method call, runtime license required • OPC UA Server Yes; data access (read, write, subscribe), method call, runtime license required • OPC UA Server Yes; data access (read, write, subscribe), method call, runtime license req	• SNMP	Yes
• LLDP Yes Redundancy mode No MRP No - MRPD No SIMATIC communication Yes Open IE communication Yes - Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes - Data length, max. 8 kbyte • UDP Yes - Data length, max. 8 kbyte • UDP Yes - Data length, max. 8 kbyte • UDP Yes - Data length, max. 8 kbyte • UDP Yes - Data length, max. 1472 byte Web server Yes • Supported Yes • User-defined websites Yes OPC UA Yes; data access (read, write, subscribe), method call, runtime license required • OPC UA Server Yes; data access (read, write, subscribe), method call, runtime license required - Application authentication "anonymous" or by user name & password - Number of sessions, max. 10 - Number of sessions, max. 50 - Sampling interval, min. 100 ms	• DCP	Yes
Redundancy mode Media redundancy MRPD MRPD SIMATIC communication • S7 routing Yes Open IE communication • TCP/IP Data length, max. • ISO-on-TCP (RFC1006) Yes Data length, max. • ISO-on-TCP (RFC1006) Yes Data length, max. • UDP Data length, max. 1472 byte Web server • supported Yes • Supported Yes • Supported Yes; "Basic" license required • OPC UA Yes; data access (read, write, subscribe), method call, runtime license required • OPC UA Yes; data access (read, write, subscribe), method call, runtime license required - Application authentication "anonymous" or by user name & password - Number of sessions, max. 10 - Sampling interval, min. 100 ms	• LLDP	
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Data length, max.1 472 byteWeb server• supportedYes• User-defined websitesYesOPC UA• Runtime license requiredYes; "Basic" license required• OPC UA ServerYes; data access (read, write, subscribe), method call, runtime license required• OPC UA ServerYes; data access (read, write, subscribe), method call, runtime license required• Application authenticationAvailable 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.50- Sampling interval, min.100 ms- Publishing interval, min.200 ms	-	
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OPC UA • Runtime license required • OPC UA Server - Application authentication - User authentication - Number of sessions, max. - Number of subscriptions per session, max. - Sampling interval, min. - Publishing interval, min. 200 ms		
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— User authentication"anonymous" or by user name & password— Number of sessions, max.10— Number of subscriptions per session, max.50— Sampling interval, min.100 ms— Publishing interval, min.200 ms	- Application authentication	Available security policies: None, Basic128Rsa15, Basic256Rsa15,
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Number of subscriptions per session, max.50 Sampling interval, min.100 ms Publishing interval, min.200 ms		
— Sampling interval, min. 100 ms — Publishing interval, min. 200 ms		
— Publishing interval, min. 200 ms		
- Number of server methods, max. 20	-	
	 Number of server methods, max. 	20

- Number of noncline terms, max. 1000 - Number of aver inferioacs, max. 2 - Number of noces for user-defined server 2000 interfaces, max. 2 200 interfaces, max. 2 200 interfaces		1 000
	— Number of monitored items, max.	1 000
Interfaces, max. Further protocols Number of configurable Traces Proceeding and the set of the s		
Further protocols Yes communication functions / header Yes S7 communication Yes e as berver Yes • as clent b, max. See online help (S7 communication, user data size) Number of concentons: Person • overall PC Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / 10 max; OPC User Connections: • overall PC Connections: 7 reserved / 4 max; CPC User Connections: 3 reserved / 10 max; OPC User Connections: 10 reserved / 10 max; OPC User Connections; 1		2 000
MODBUS Yes communication functions / beader S7 communication supported sa server sa clean sa clean sa clean sa clean yes yes sa clean yes yes sa clean yes yes sa clean yes		
communication Freeman SY communication Yes • as server Yes • as clent Yes • as clent Yes • User data per job, max. See online help (37 communication, user data size) Number of connections PG Connections - 4 reserved / 4 max. HMI Connections: 12 reserved / 20 max; OPC UA • overall PG Connections - 8 reserved / 10 max; OPC UA Status/control Status/control • Status/control Yes • Forcing Yes • Procing Yes • Procing Yes • Procing Yes • Procing Yes • Rorold Yes • Number of configurable Traces 2 • Rorold Yes • Rorold ELD Yes • Rorold ELD Yes • Rorold ELD Yes • Rorold Rel Yes • Rorold Rel Yes • Number of configurable Traces 2 • Rorold Rel Yes • Rorold Rel Yes • Number of positioning axes, mad 8	· · · ·	Yes
S7 communication • supported Yes • as server Yes • as server Yes • so client Yes • User class per job, max. See online help (S7 communication, user data size) Number of connections PG Connections: 4 reserved / 4 max; HMI connections: 12 reserved / 18 max; Roy on User Connections: 3 reserved / 10 max; Open User Connections: 3 reserved / 10 max; Open User Connections: 3 reserved / 10 max; Total Connections: 34 reserved / 64 max; HMI connections: 34 reserved / 70 max; Total Connections: 12 reserved		
Supported Yes vas dient Yes See online help (S7 communication, user data size) Number of connections: 2 reserved / 14 max; Vpc Connections: 2 reserved / 1 Statuscontrol PG Connections: 8 reserved / 14 max; Vpc Connections: 3 reserved / 14 max; Vpc Connection reserved / 14 max; Vpc Connections: 3 reserved /		
As server As clerk Also end data per job, max. See online help (S7 communication, user data size) Number of connections PG Connections: 4 reserved / 4 max, EMI Connections: 12 reserved / 18 max, S7 Connections: 8 reserved / 4 max, Dev CD AB Connections: 0 reserved / 10 max, Total Connections: 32 reserved / 30 max, DPC UA Connections: 0 reserved / 10 max, Total Connections: 34 reserved / 4 max, Dev CD UA Connections: 0 reserved / 10 max, Total Connections: 34 reserved / 10 max, Total Con		Vac
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User data per job, max. See online help (S7 communication, user data size) Number of connections: PG Connections: 4 reserved / 4 max, FMI Connections: 12 reserved / 18 max, S7 Connections: 8 reserved / 19 max, Total Connections: 3 reserved / 30 max, OPC UA Connections: 0 reserved / 10 max, Total Connections: 34 reserved / 10 max, Total Connectio		
Number of connections PG Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / 14 max; ST Connections: 8 reserved / 14 max; OPC UA Connections: 8 reserved / 14 max; Web Connections: 2 reserved / 64 max; OPC UA Connections: 9 reserved / 10 max; Total Connections: 34 reserved / 64 max Status/control variable Yes • Status/control variable Yes • Status/control variable Yes • Status/control variable Yes • Forcing Yes • Pasent Yes • Number of configurable Traces 2 • RIN/STOP LED Yes • Number of position-controlled positioning axes, max 8 Number of position-controlled positioning axes, max 8 Number of position-controlled positioning axes, max 8 • Number of position-controlled positioning axes, max 8 • Detontial s		
Overall PG Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / Rax; SY Connections: 8 reserved / 14 max; Web Connections: 21 reserved / 30 max; OPC UAC Connections: 0 reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 64 max reserved / 10 max; Total Connections: 34 reserved / 10 max; Total Connectio		See online help (S7 communication, user data size)
18 max; S7 Connections: 8 reserved / 14 max; OPC UA Connections: 0 reserved / 10 max; Total Connections: 34 reserved / 64 max Status/control variable • Forcing • Forcing • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • RUN/STOP LED • RUN/STOP LED • RUN/STOP LED • Number of positioning axes, max • Prequery measurement • Yes • Number of positioning axes, max • Number of positioning axes, max • Potential separation digital inputs • Detential separation digital inputs • Detential separatio		
Test commissioning functions Status/control • Status/control • Status/control • Variables Porcing • Forcing • Ves Interrupts/diagnostics/status information Diagnostics indication LED • RUNNSTOP LED • RENDSTOP LED • Number of position-controlled positioning axes, max Bioposition-controlled positioning axes, max Resolution Integrated Functions • Number of position-controlled positioning axes, max Number of position-controlled positioning axes, max A Number of position-controlled positin inputs • Potentia	• overall	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
Status/control • Status/control variable Yes • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Yes • Forcing Yes • Jagnostic buffer Yes • Jorden Yes Traces 2 • Number of configurable Traces 2 • Number of configurable Traces 2 • Number of configurable Information Interrupts/diagnostics/status/information Diagnostics indication LED Yes • RROR RED Yes • Mumber of position-ing ares, max Yes Integrated Functions Yes Integrated Functions Yes Number of position-ing ares, max Yes Number of position-ing ares, max 4. With integrated outputs PiD controller Yes Number of position-ing ares, max 4. Number of position-ing ares, max 4. Number of position-ing ares, max 4. Number of pulse outputs 4 Innif frequency (pulse) 100 KHz Potential separation digital inputs No • Extevene the channels,	Test commissioning functions	
Statusicontrol variable Variables		
• Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Yes Diagnostic buffer . • present Yes Traces . • Number of configurable Traces 2 • Memory size per trace, max. 512 kbyte Interrupts/diagnostice/status Information . Diagnostics indication LED Yes • ERROR LED Yes • MAINT LED Yes Integrated Functions . Frequency measurement Yes controlled positioning axes, max 8 Number of position-controlled positioning faxes, max 8 Number of position-controlled positioning axes, max 4 Viring transmitter Yes Pio controller Yes Number of position-controlled positioning axes, max 4 Number of position-controlled positioning axes, max 4 Number of publics outputs 4 Limit frequency (pulse) 100 kHz Potential separation digital inputs No • between the channels No • between the channels, in groups of 1 Potential separation digital outputs Yes • between the channels, in groups of 1 Electricity acc. t		Vac
Forcing Yes Diagnostic buffer Yes • present Yes Traces 2 • Number of configurable Traces 2 • RUNSTOP LED Yes • RUNSTOP LED Yes • Controlled positioning Yes • Controlled positioning axes, max 8 Number of position-controlled positioning axes, max 8 Number of position-controlled positioning axes, max 4 Number of position-controlled position ingerate 4 Num		
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resent Yes Traces • • Number of configurable Traces 2 • Memory size per trace, max. 512 kbyte Interrupts/diagnostics/status information • Diagnostics indication LED • • RNINSTOP LED Yes • RRINSTOP LED Yes • MAINT LED Yes Integrated Functions Yes Prequency measurement Yes 0 mumber of position-ing axes, max 8 Number of positioning axes via pulse-direction interface 4; With integrated outputs PID controller Yes Number of alam inputs 4 Number of pulse outputs 4 Limit frequency (pulse) 100 kHz Potential separation digital inputs No • between the channels, in groups of 1 • Determital separation digital outputs Yes • between the channels, in groups of 1 • between the channels, in groups	5	
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Interrupts/diagnostics/status information Diagnostics indication LED • RUN/STOP LED • ERROR LED • MAINT LED Integrated Functions ////////////////////////////////////	_	
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— Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference • Interference immunity on supply lines acc. to IEC 61000-4-4	-	8 kV
Interference immunity to cable-borne interference Interference immunity on supply lines acc. to IEC 61000-4-4 		6 kV
Interference immunity on supply lines acc. to IEC Yes 61000-4-4		
Interference immunity on signal cables acc. to IEC Yes	 Interference immunity on supply lines acc. to IEC 	Yes
	 Interference immunity on signal cables acc. to IEC 	Yes

61000-4-4	
Interference immunity against voltage surge	
 Interference immunity on supply lines acc. to IEC 61000-4-5 	Yes
Interference immunity against conducted variable disturbance	e induced by high-frequency fields
Interference immunity against conducted variable distancement	Yes
radiation acc. to IEC 61000-4-6	
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	0
Free fall	S
 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
- herizental installation, min	-20 °C
 horizontal installation, min. horizontal installation, max. 	-20 °C
vertical installation, min.	-20 °C
vertical installation, max.	50 °C
Ambient temperature during storage/transportation	50.0
min.	-40 °C
• max.	70 °C
	10 0
Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Storage/transport, 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 	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
60068-2-6	
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
Pollutant concentrations	value), duration 11 ms
Pollutant concentrations • SO2 at RH < 60% without condensation	value), duration 11 ms
 SO2 at RH < 60% without condensation 	
 SO2 at RH < 60% without condensation configuration / header 	value), duration 11 ms
• SO2 at RH < 60% without condensation configuration / header configuration / programming / header	value), duration 11 ms
SO2 at RH < 60% without condensation configuration / header configuration / programming / header Programming language	value), duration 11 ms S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
 SO2 at RH < 60% without condensation configuration / header configuration / programming / header Programming language — LAD 	value), duration 11 ms S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Yes
SO2 at RH < 60% without condensation configuration / header configuration / programming / header Programming language	value), duration 11 ms S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free

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	110 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	415 g

last modified:

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