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

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General information					
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)					
• 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				
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	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 hit operations, two	0.00 ver linetruction				
for bit operations, typ.	0.08 µs; / instruction				
for word operations, typ. for floating point arithmetic, typ.	1.7 µs; / instruction 2.3 µs; / instruction				
CPU-blocks	DD. F.O. FD. constant and finant. The maximum number of				
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					
	Voc				
Hardware clock (real-time) Rockup time	Yes				
Backup timeDeviation per day, max.	480 h; Typical ±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	14				
— up to 40 °C, max. Input voltage	14				
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				
Cabla lanath	@ 30 kHz				
Cable length	E00 m E0 m far tachaglaris - I fur stime				
 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					
• for signal "0", max.	0.1 V; with 10 kOhm load				
• for signal "1", min.	20 V				
Output current					

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	
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
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
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1. Interface	
1. Interface Interface type	PROFINET
1. Interface Interface type Isolated	PROFINET Yes
1. Interface Interface type Isolated automatic detection of transmission rate	PROFINET Yes Yes
1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation	PROFINET Yes Yes Yes
1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing	PROFINET Yes Yes
1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types	PROFINET Yes Yes Yes Yes
1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet)	PROFINET Yes Yes Yes Yes
1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports	PROFINET Yes Yes Yes Yes 1
1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch	PROFINET Yes Yes Yes Yes
1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) • Number of ports • integrated switch Protocols	PROFINET Yes Yes Yes Yes 1 No
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 Yes Yes Yes Yes 1 No
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	PROFINET Yes Yes Yes Yes 1 No Yes Yes Yes
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 • SIMATIC communication	PROFINET Yes Yes Yes Yes 1 No Yes Yes Yes Yes
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 • SIMATIC communication • Open IE communication	PROFINET Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes; Optionally also encrypted
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 • SIMATIC communication • Open IE communication • Web server	PROFINET Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes; Optionally also encrypted Yes
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 • SIMATIC communication • Open IE communication • Web server • Media redundancy	PROFINET Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes; Optionally also encrypted
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	PROFINET Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes; Optionally also encrypted Yes
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 • SIMATIC communication • Open IE communication • Web server • Media redundancy	PROFINET Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes; Optionally also encrypted Yes No
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	PROFINET Yes Yes Yes Yes Yes 1 No Yes Yes Yes Yes; Optionally also encrypted Yes No
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	PROFINET Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes; Optionally also encrypted Yes No
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	PROFINET Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes; Optionally also encrypted Yes No 100 Mbit/s
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 — Isochronous mode	PROFINET Yes Yes Yes Yes 1 No Yes Yes Yes Yes; Optionally also encrypted Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No
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 - IRT	PROFINET Yes Yes Yes Yes 1 No Yes Yes Yes Yes; Optionally also encrypted Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No No
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 - IRT - PROFIenergy	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
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 - IRT - PROFIenergy - PROFIenergy - Prioritized startup	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
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 - IRT - PROFIenergy - PROFIenergy - Prioritized startup - Number of IO devices with prioritized startup,	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes
1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autoressing 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 - IRT - PROFIenergy - Prioritized startup - Number of IO devices with prioritized startup, max. - Number of connectable IO Devices, max. - Number of connectable IO Devices for RT,	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
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 - Isochronous mode - IRT - PROFIenergy - Prioritized startup - Number of IO devices with prioritized startup, max. - Number of connectable IO Devices, max. - Number of connectable IO Devices for RT, max.	PROFINET Yes Yes Yes Yes 1 No Yes Yes Yes Yes Yes Yes Yes Optionally also encrypted Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No No No No No Yes 16
1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autonegotiation Autorossing 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 - IRT - PROFIenergy - Prioritized startup - Number of IO devices with prioritized startup, max. - Number of connectable IO Devices, max. - Number of connectable IO Devices for RT,	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes

Bundarbouldy advanced each value, max. For an informant value of the update line also depends on the advanced of modPRET (10) with number of 10 devices and the quantity of configured value of data. FOCIPIENT IO Device Services FOCIP communication FOCIP communication FOCIP communication FociPienery Shared device FOCIP communication FOCIPIENT Shared device FOCIP communication FociPienery Shared device FOCIPIENT Shared device FOCIPIENT Shared device FOCIPIENT Shared device		8				
PROFINET IC Device communication component set for PROFINET IC. on the number of IC devices and the quantity of configured user data. PROFINET IC Device Services PROFINET IC Device Services Services Prescretation - PROFINET IC Device Yes: encryption with TLS V1.3 pre-selected - Isothorous mode No - RT No - PROFINET IC DEVICE Yes: - Number of IC Contuliers with shared device; max. Yes Profiles Yes Profiles Yes: CM 1243-5 (nave) required PROFILES Yes: CM 1243-2 required Profiles Yes	simultaneously activated/deactivated, max.	The minimum value of the update time also depends on the				
PROFINET IO Device Services - PGOP communication Yes: encryption with TLS V1.3 pre-selected - Isotronous mode No - PROFInenzy Yes - Shared device Yes - Number of IO Controllers with shared device, Yes - Number of IO Controllers with shared device, Yes - Number of IO Controllers with shared device, Yes - Number of IO Controllers with shared device, Yes - Number of IO Controllers with shared device, Yes - Number of IO Controllers with shared device, Yes - Number of IO Controllers with shared device, Yes Proficeois Yes - Number of IO Controllers with shared device, Yes Proficeois Yes Proficeois Yes - Stantariac Yes Proficeois Yes - Controll Yes - Controllers Yes - Other Yes - Controllers Yes - Controllers Yes - Stantariac Yes - Controllers Yes - Controllers Yes - Stantariac Yes - Stantariac Yes - Stantariac Yes - Data length, max.<		communication component set for PROFINET IO, on the number of IO				
Services PGCP0 communication Yes; encryption with TLS V1.3 pre-selected Hochronous mode No Hochronous mode No Hochronous mode No Hochronous mode Yes PROFilaste No Hochronous mode Yes		devices and the quantity of configured user data.				
- PGOP communication Yes; encryption with TLS V1.3 pre-selected - IsoChronous mode No - IRT No - PROFinancy Yes - Shared device Yes - Number of IO Controllers with shared device, Yes - Number of IO Controllers with shared device, Yes - Number of IO Controllers with shared device, Yes PROFIBUS Yes; CM 1243-5 (master) or CM 1242-5 (slave) required PROFIBUS Yes; CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA Yes; OPC UA Server - Shinterface Yes; CM 1243-5 (master) or CM 1242-5 (slave) required Protocols (Ethernet) Yes; OPC UA Server - Shinterface Yes; CM 1243-5 (master) or CM 1242-5 (slave) required Protocols (Ethernet) Yes; CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA Yes; OPC UA Server - TOPIP Yes - TOPIP Yes OPC UA Yes - TOPIP Yes - TOPIP Yes - DOPC Yes - MRPD No - MRPD <td></td> <td></td>						
− leachronous mode No − IPRO Florency Yas − PROFInercy Yas − Number of IO Controllers with shared device, max. 2 Protocols Yes Protocols		Yes; encryption with TLS V1.3 pre-selected				
PROFilenergy Yes Number of IO Controllers with shared device, max. Yes Supports protocol for PROFINET IO Yes PROFIsale No PROFISALE No PROFISALE No PROFISALE No PROFISALE No PROFISALE No PROFISALE Yes: CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA Yes: CM 1243-5 (master) or CM 1242-5 (slave) required PROFISALE Yes: CM 1243-2 required Protocols (Ethement) Yes - Drotop Yes - Drotop Yes - MRPD No - MRPD No - MRPD No - Strotopic Yes - Drais length, max. 8 ktyle - Strotopic Yes - Drais length, max. 8 ktyle - Strotopic Yes - Drais length, max. 1472 byle Web senser Yes: data access (read, write, subscritop), method call, runtime license required - Application authentication	— Isochronous mode					
 Shared davice Yes Number of IO Controllers with shared device, 2 Protocols Supports protocol for PROFINET IO Yes PROFIBUS Yes (M 1243-5 (master) or OM 1242-5 (slave) required OPC UA Yes (M 1243-5 (master) or OM 1242-5 (slave) required OPC UA Yes (M 1243-5 (master) or OM 1242-5 (slave) required OPC UA Yes (M 1243-5 (master) or OM 1242-5 (slave) required OPC UA Yes (M 1243-2 (required Protocols (Ethemet) TOP/P Yes (M 1243-2 (required Protocols (Ethemet) TOP/P Yes ULDP Yes ULDP Yes ULDP Yes OPCP Yes OPC IA OPCP Yes OPC IA OPC	— IRT	No				
- Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFINAT Supports protocol for PROFINET IO PROFINAT PROFINAT Protocols Characterized Protocols Protocols Characterized Protocols Protocols Protocols Characterized Protocols Characterized Protocols Characterized Protocols Characterized Protocols Characterized Protocols Protocols Protocols Characterized Protocols Protocols	— PROFlenergy	Yes				
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Protocols Yes Supports protocol for PROFINET IO Yes PROFIses No PROFISUS Yes; CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA Yes; CM 1243-2 required Protocols (Ethernet) Yes • TCP/IP Yes • DCP No • SNMP Yes • DCP Yes • LLDP Yes • Balandame No • SNMP Yes • LLDP Yes Redundancy mode Media retundancy - MRP No - MRP No - MRP No - Otal length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes - Otal length, max. 8 kbyte • UDP Yes - Data length, max. 1472 byte Web server Yes • UDP Yes - Data length, max. 1472 byte Web server Yes (data access (read, wite, subscribe), method call, runtime license required		2				
Supports protocol for PROFINET IO Yes PROFIBUS No PROFIBUS Yes; CM 1243-5 (master) or CM 1242-5 (slave) required QPC UA Yes; CM 1243-2 required PROFIBUS Yes; CM 1243-2 required Protocols (Ethernet) Yes • TCP/P No • DHCP No • SMMP Yes • DCP Yes • DCP Yes • DCP Yes • DCP Yes • MRP MR - MRPD No • SToruling Yes • Data length, max. 8 kbyte • STO-OP (RFC1006) Yes • Data length, max. 8 kbyte • UDP Yes - Data length, max. 1 472 byte • UDP Yes • Data length, max. 1 472 byte • Suported Yes • Data length, max. 1 472 byte • Suported Yes • OPC UA Server Yes • OPC UA Server TCP/R <td></td> <td></td>						
PROFISIS No PROFISIS Yes; CM 1243-5 (master) or CM 1242-5 (slave) required OPC UA Yes; CM 1243-2 required Protocols (themet) Yes; CM 1243-2 required • TCP/IP Yes • DICP No • SMMP Yes • DICP No • SMMP Yes • DICP Yes • Redundancy mode Wes Media redundancy Yes • Data length, max. Yes • SToroung Yes • Data length, max. Yes • Datolength, max. Yes <t< td=""><td></td><td>Yes</td></t<>		Yes				
OPC UA Yes: OPC UA Server AS-Interface Yes: CM1243-2 required Protocols (Ethernet) Yes • TCP/IP Yes • DHCP No • SNMP Yes • DCP Yes • DCP Yes • DCP Yes • DCP Yes • Eddondancy mode Media redundancy Media redundancy mode No Media redundancy mode Yes Open II Communication Yes • ST routing Yes Open II Communication 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: data access (read, write, subscribe), method call, runtime 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 • 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 • Application authentrication No manonymous*						
AS-Interface Yes; CM 1243-2 required Protocols (Ethernet) • TCP/IP • TCP/IP Yes • DHCP No • SIMNP Yes • DCP Yes • LDP Yes • Edundancy mode - Media redundancy - - MRP No - MRPD No SIMATIC communication - • ST routing Yes Open IE communication - • 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 • UDP Yes • Data length, max. 1472 byte Web server Yes • User defined websites Yes • Data length, max. 1472 byte Web server Yes • Number of secorition Yes: "Basic" license required • OPC UA Yes • Number of secoritions preseion, max. 5 <td>PROFIBUS</td> <td>Yes; CM 1243-5 (master) or CM 1242-5 (slave) required</td>	PROFIBUS	Yes; CM 1243-5 (master) or CM 1242-5 (slave) required				
Protocols (Ethernet) Yes • DPICP Yes • DPICP No • SNMP Yes • DCP Yes • DCP Yes • DCP Yes • MRP No - MRP No SIMATIC communication No • STrouting Yes Open IE communication Yes • Data length, max. 8 kbyte • ISO-on-TCP (RFC1006) Yes - Data length, max. 8 kbyte • USer - defined websites Yes - Data length, max. 1 472 byte Web server Yes • User - defined websites Yes OPC UA Yes / Yes • User - defined websites Yes • OPC UA Server Yes; data access (read, write, subscribe), method cail, runtime license required • OPC UA Server Yes; data access (read, write, subscribe), method cail, runtime license required • Application authentication Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Rsa15, Basic256Rsa15, Basic256Rsa26 - User au	OPC UA	Yes; OPC UA Server				
• TCP/IP Yes • DHCP No • SINIP Yes • DCP Yes • LLDP Yes Redundancy mode No Media redundancy No - MRP No - MRPD No SIMATIC communication Ves • TCP/IP Yes • TCP/IP 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. 1472 byte Web server Yes • supported Yes • OPC UA Yes • Runtime license required Yes; "Basic" license required • OPC UA Server • Supported Yes • User adtinentication Available security policies: None, Basic128Rsa15, Basic256Rsa15, Ba	AS-Interface					
• DHCPNo• SINIPYes• DCPYes• LDPYesRedundancy mode	Protocols (Ethernet)					
• SNMP Yes • DCP Yes • LLDP Yes Redurdancy mode Media redundancy - MRP No - MRP No - MRP No STouting Yes Open IE communication - • TCP/IP Yes - Data length, max. 8 ktyle • ISO-on-TCP (RFC1006) Yes - Data length, max. 8 ktyle • UDP Yes - Data length, max. 8 ktyle • UDP Yes - Data length, max. 1 472 byte Web server Yes • Suported Yes OPC UA Yes • Runtime license required Yes; "Basic" license required • OPC UA Yes • Runtime license required Yes; "data access (read, write, subscribe), method call, runtime license required • Application authentication access (read, write, subscribe), method call, runtime license required • Number of subscriptions per session, max. 10 • Number of subscriptions per session, max. 5 • Number of sessions, max. 20 • Number of server interfaces, max. 20 • Number of server interfaces, max. 200 • Number of se						
 DCP Yes LLDP Yes Ves Redundancy mode Media redundancy MRP MRP No SIMATIC communication STrotining Yes Open IE communication SToromunication STORE required Yes Data length, max. 8 kbyte ISC-on-TCP (RFC1006) Yes Data length, max. 8 kbyte ISC-on-TCP (RFC1006) Yes Data length, max. 8 kbyte UDP Yes Data length, max. 1472 byte Web server Supported Ves USer-defined websites Yes OPC UA Patientific access (read, write, subscribe), method call, runtime license required OPC UA Portion authentication Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic						
• LLDP Yes Redundancy mode Media redundancy MRP No MRPD No SIMATIC communication No • TCP/IP Yes Open IE communication Ves 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. 1472 byte Web server Yes • UDP Yes Data length, max. 1472 byte Web server Yes • UDP - Data length, max. 1472 byte Web server Yes • UDP - Lota length, max. 1472 byte • UDP - Lota length, max. 1472 byte Web server Yes • UDP - Lota length, max. 1472 byte • UDP - Lota length, max. Yes OPC UA Server • OPC UA Server Yes - Applicitation authentication <t< td=""><td></td><td></td></t<>						
Redundancy mode MRP No MRP No StMATIC communication Yes Open IE communication Yes • TCP/IP Yes - Data length, max. 8 kbyle • ISO-on-TCP (RFC1006) Yes - Data length, max. 8 kbyle • UDP Yes - Data length, max. 1 472 byte Web server Yes - Data length, max. 1 472 byte Web server Yes • UDP Yes - Data length, max. 1 472 byte Web server Yes • User-defined websites Yes OPC UA Yes; 'Basic' license required • Runtime license required Yes; 'Basic' license required • OPC UA Server - Application authentication Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Rsa25, Basic256Rsa						
Media redundancy No — MRPD No SIMATIC communication Yes • 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. 8 kbyte • UDP Yes — Data length, max. 1 472 byte Web server Yes • UDP Yes — Data length, max. 1 472 byte Web server Yes • Upported Yes • User-defined websites Yes 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 Tanonymous" or by user name & password - Number of subscriptions per session, max. 10 - Number of server interfaces, max. 20 - Number of server interfaces, max. 2 - Number of ondes for user-defined server interfaces, max. 2 - Number of ondes for user-defined server interfaces, max. 2 - Number of ondes for user-defined server		Yes				
MRP No MRPD No SIMATIC communication						
MRPD No SIMATIC communication	-	No				
SIMATIC communication Yes Open IE communication Yes Open IE communication Yes - Data length, max. 8 kbyte - ISO-on-TCP (RFC1006) Yes - Data length, max. 8 kbyte - Data length, max. 8 kbyte - Data length, max. 1472 byte Web server Yes - Data length max. 1472 byte Web server Yes - User defined websites Yes OPC UA Yes; "Basic" license required - Application authentication Yes; data access (read, write, subscribe), method call, runtime license required - Application authentication "anonymous" or by user name & password - User authentication "anonymous" or by user name & password - Number of subscriptions per session, max. 10 - Number of subscriptions per session, max. 20 - Number of source interfaces, max. 20 - Number of source interfaces, max. 2 - Number of oredes for user-defined server interfaces, max. 2 - Numb						
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 • Supported Yes • User-defined websites Yes • OPC UA • Runtime license required Yes; "Basic" license required • Application authentication · Available security policies: None, Basic128Rsa15, Basic256Rsa15, • User authentication · anonymous" or by user name & password • Number of sessions, max. 10 • Number of server methods, max. 20 • Number of server methods, max. 20 • Number of server interfaces, max. 20 • Number of onotiored items, recommended max. 1000 • Number o						
• TCP/IP 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	S7 routing	Yes				
Data length, max.8 kbyte• ISO-on-TCP (RFC1006)Yes Data length, max.8 kbyte• UDPYes Data length, max.1 472 byteWeb server	Open IE communication					
· ISO-on-TCP (RFC1006)Yes- Data length, max.8 kbyte· UDPYes- Data length, max.1 472 byteWeb server1 472 byteWeb serverYes• User-defined websitesYesOPC UAYes; "Basic" license required• Runtime license requiredYes; 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.5- Sampling interval, min.200 ms- Number of server methods, max.20- Number of server interfaces, max.2- Number of server interfaces, max.2- Number of nonitored items, recommended max.2000- Number of nonitored items, recommended max.2000- Number of nonitored items, recommended max.2000- Number of nonitored items, recommended max.3000- Number of notes for user-defined server2000- NoDBUSYescommunication functions / header557 communication functions / headerYes	• TCP/IP	Yes				
Data length, max.8 kbyte• UDPYes Data length, max.1472 byteWeb server-• supportedYes• User-defined websitesYesOPC UA-• OPC UA ServerYes; "Basic" license required• OPC UA ServerYes; data access (read, write, subscribe), method call, runtime license required- Application authenticationYes; 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 subscriptions per session, max.20- Number of solver methods, max.20- Number of solver methods, max.20- Number of solver interfaces, max.2- Number of notored iterns, recommended max.2000- Number of solver interfaces, max.2- Number of notored iterns, recommended max.2- Number of notored iterns, recommended max.3- Number of notioned iterns, recommended max.3- Solver- Solver- Solver- Solver- Solver- Solver- Solver- Solver<	-	8 kbyte				
• UDPYes- Data length, max.1 472 byteWeb server						
— Data length, max. 1 472 byte Web server - • supported Yes • User-defined websites Yes OPC UA - • OPC UA Server Yes; data access (read, write, subscribe), method call, runtime license required • OPC UA Server Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 - User authentication Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 - Number of sessions, max. 10 - Number of subscriptions per session, max. 5 - Sampling interval, min. 100 ms - Number of server methods, max. 20 - Number of server interfaces, max. 20 - Number of server interfaces, max. 2 - Number of nonitored items, recommended max. 1000 - Number of nonitored items, recommended max. 2 - Number of nodes for user-defined server interfaces, max. 2 - Number of nodes for user-defined server interfaces, max. 2 • MODBUS Yes communication functions / header Yes	-					
Web server • 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 sessions, max. 5 - Sampling interval, min. 100 ms - Number of server methods, max. 20 - Number of server interfaces, max. 2 - Number of server interfaces, max. 2 - Number of server interfaces, max. 2 - Number of nonitored items, recommended max. 2000 - Number of nonitored items, recommended max. 2 - Number of nonitored items, recommended max. 2 - Number of nodes for user-defined server interfaces, max. 2 • MODBUS Yes communication functions / header 57 communication • supported Yes						
• supported Yes • User-defined websites Yes OPC UA	-	1 472 byte				
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 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. 200 ms - Publishing interval, min. 200 ms - Number of server methods, max. 20 - Number of server interfaces, max. 2 - Number of nonitored items, recommended max. 2000 - Number of nodes for user-defined server interfaces, max. 2 - Number of nodes for user-defined server interfaces, max. 2 • MODBUS Yes communication functions / header S7 communication • supported Yes		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 - Number of server methods, max. 20 - Number of server interfaces, max. 2 - Number of server interfaces, max. 2 - Number of nodes for user-defined server interfaces, max. 2 - Number of nodes for user-defined server interfaces, max. 2 • MODBUS Yes Communication functions / header Yes						
• 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.5- Sampling interval, min.100 ms- Publishing interval, min.200 ms- Number of server methods, max.20- Number of server interfaces, max.20- Number of nonitored items, recommended max.1000- Number of nodes for user-defined server interfaces, max.2- Number of nodes for user-defined server interfaces, max.2• MODBUSYescommunication • supportedYes	OPC UA					
required Application authentication Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Rsa256 - 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 monitored items, recommended max. 1000 - Number of server interfaces, max. 2 - Number of nodes for user-defined server interfaces, max. 2 - Number of nodes for user-defined server interfaces, max. 2 - Number of nodes for user-defined server interfaces, max. 2 • MODBUS Yes communication functions / header Yes	Runtime license required	Yes; "Basic" 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.5- Sampling interval, min.100 ms- Publishing interval, min.200 ms- Number of server methods, max.20- Number of server methods, max.20- Number of server interfaces, max.2- Number of server interfaces, max.2- Number of server interfaces, max.2- Number of nodes for user-defined server interfaces, max.2000- Number of nodes for user-defined server interfaces, max.2- MODBUSYescommunicationYesS7 communicationYes	OPC UA Server					
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 monitored items, recommended max.1 000 Number of server interfaces, max.2 Number of server interfaces, max.2 Number of nodes for user-defined server interfaces, max.2000 Number of nodes for user-defined server interfaces, max.2 Sord SordYes Sord						
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 monitored items, recommended max.1000 Number of server interfaces, max.2 Number of server interfaces, max.2 Number of nodes for user-defined server interfaces, max.2 Sorder	— Application authentication	Available security policies: None, Basic128Rsa15, Basic256Rsa15,				
Sampling interval, min.100 ms 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, max.2 000Further protocolsYescommunication functions / headerS7 communication • supportedYes		Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256				
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, max.2 000Further protocolsYes• MODBUSYesS7 communication • supportedYesYes	— User authentication	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password				
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, max.2 000Further protocols2 000• MODBUSYescommunication functions / headerYes\$7 communication • supportedYes	— User authentication— Number of sessions, max.	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10				
Number of monitored items, recommended max.1 000 Number of server interfaces, max.2 Number of nodes for user-defined server interfaces, max.2 000Further protocols2 000• MODBUSYesS7 communication • supportedYesYes	 User authentication Number of sessions, max. Number of subscriptions per session, max. Sampling interval, min. 	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 5				
max.2 Number of server interfaces, max.2 Number of nodes for user-defined server interfaces, max.2Further protocols2• MODBUSYesCommunication functions / header\$7 communicationYes• supportedYes	 User authentication Number of sessions, max. Number of subscriptions per session, max. Sampling interval, min. Publishing interval, min. 	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 5 100 ms 200 ms				
Number of server interfaces, max. 2 Number of nodes for user-defined server interfaces, max. 2 000 Further protocols Yes • MODBUS Yes communication functions / header S7 communication • supported Yes	 User authentication Number of sessions, max. Number of subscriptions per session, max. Sampling interval, min. Publishing interval, min. Number of server methods, max. 	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 5 100 ms 200 ms 20				
interfaces, max. Further protocols • MODBUS Yes communication functions / header S7 communication • supported Yes	 User authentication Number of sessions, max. Number of subscriptions per session, max. Sampling interval, min. Publishing interval, min. Number of server methods, max. Number of monitored items, recommended 	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 5 100 ms 200 ms 20				
Further protocols • MODBUS Yes communication functions / header S7 communication • supported Yes	 User authentication Number of sessions, max. Number of subscriptions per session, max. Sampling interval, min. Publishing interval, min. Number of server methods, max. Number of monitored items, recommended max. 	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 5 100 ms 200 ms 20 1 000				
MODBUS Yes communication functions / header S7 communication supported Yes	 User authentication Number of sessions, max. Number of subscriptions per session, max. Sampling interval, min. Publishing interval, min. Number of server methods, max. Number of monitored items, recommended max. Number of server interfaces, max. Number of nodes for user-defined server 	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 5 100 ms 200 ms 20 1 000 2				
S7 communication • supported Yes	 User authentication Number of sessions, max. Number of subscriptions per session, max. Sampling interval, min. Publishing interval, min. Number of server methods, max. Number of monitored items, recommended max. Number of server interfaces, max. Number of nodes for user-defined server interfaces, max. 	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 5 100 ms 200 ms 20 1 000 2				
• supported Yes	 User authentication Number of sessions, max. Number of subscriptions per session, max. Sampling interval, min. Publishing interval, min. Number of server methods, max. Number of monitored items, recommended max. Number of server interfaces, max. Number of nodes for user-defined server interfaces, max. Further protocols	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 5 100 ms 200 ms 20 1 000 2 2 000				
	 User authentication Number of sessions, max. Number of subscriptions per session, max. Sampling interval, min. Publishing interval, min. Number of server methods, max. Number of monitored items, recommended max. Number of server interfaces, max. Number of nodes for user-defined server interfaces, max. Further protocols MODBUS 	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 5 100 ms 200 ms 20 1 000 2 2 000				
• as server Yes	 User authentication Number of sessions, max. Number of subscriptions per session, max. Sampling interval, min. Publishing interval, min. Number of server methods, max. Number of monitored items, recommended max. Number of server interfaces, max. Number of nodes for user-defined server interfaces, max. Further protocols MODBUS 	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 5 100 ms 200 ms 20 1 000 2 2 000				
	 User authentication Number of sessions, max. Number of subscriptions per session, max. Sampling interval, min. Publishing interval, min. Number of server methods, max. Number of monitored items, recommended max. Number of server interfaces, max. Number of nodes for user-defined server interfaces, max. Further protocols MODBUS Communication functions / header 	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256 "anonymous" or by user name & password 10 5 100 ms 200 ms 20 1 000 2 2 000 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	2			
Number of configurable Traces	2			
Memory size per trace, max.	512 kbyte			
Interrupts/diagnostics/status information				
Diagnostics indication LED				
RUN/STOP LED	Yes			
	Yes			
MAINT LED	Yes			
Integrated Functions				
Frequency measurement	Yes			
controlled positioning	Yes			
Number of position-controlled positioning axes, max.	8 4: With integrated outputs			
Number of positioning axes via pulse-direction interface PID controller	4; With integrated outputs Yes			
Number of alarm inputs	4			
Number of pulse outputs	4			
LIMILITEQUENCY (DUISE)				
Limit frequency (pulse) Potential separation	100 kHz			
Potential separation				
Potential separation Potential separation digital inputs				
Potential separation Potential separation digital inputs • Potential separation digital inputs	No 1			
Potential separation Potential separation digital inputs	No			
Potential separation Potential separation digital inputs Potential separation digital inputs between the channels, in groups of	No			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs	No 1			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs	No 1 Yes			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • Potential separation digital outputs • between the channels	No 1 Yes No			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • between the channels	No 1 Yes No			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static	No 1 Yes No			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity • Interference immunity against discharge of static	No 1 Yes No 1 Yes			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels • between the channels • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge	No 1 Yes No 1 Yes 8 kV			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity • Interference immunity against discharge of static • Test voltage at air discharge - Test voltage at contact discharge	No 1 Yes No 1 Yes			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels • between the channels • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity • Interference immunity against discharge — Test voltage at air discharge — Test voltage at contact discharge Interference immunity to cable-borne interference • Interference immunity on supply lines acc. to IEC	No 1 Yes No 1 Yes 8 kV			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2	No 1 Yes No 1 Yes 8 kV 6 kV			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge — Test voltage at contact discharge Interference immunity to cable-borne interference • Interference immunity on supply lines acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. to IEC 61000-4-4	No 1 Yes No 1 Yes 8 kV 6 kV			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2	No 1 Yes No 1 Yes 8 kV 6 kV			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge — Test voltage at contact discharge • Interference immunity to cable-borne interference • Interference immunity on supply lines acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. to IEC 61000-4-4	No 1 Yes No 1 Yes 8 kV 6 kV Yes Yes			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge — Test voltage at contact discharge • Interference immunity to cable-borne interference • Interference immunity on supply lines acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. to IEC 61000-4-4	No 1 Yes No 1 Yes 8 kV 6 kV Yes Yes Yes			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • Detential separation digital outputs • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Test voltage at air discharge Test voltage at contact discharge Interference immunity to cable-borne interference • Interference immunity on supply lines acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. to IEC 61000-4-4 • Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000-4-5 Interference immunity against conducted variable disturbanc • Interference immunity against conducted variable disturbanc • Interference immunity against conducted variable disturbanc	No 1 Yes No 1 Yes 8 kV 6 kV Yes Yes Yes			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity • Interference immunity against discharge — Test voltage at air discharge — Test voltage at contact discharge Interference immunity to cable-borne interference • Interference immunity on supply lines acc. to IEC 61000-4-4 • Interference immunity on supply lines acc. to IEC 61000-4-4 • Interference immunity on supply lines acc. to IEC 61000-4-5 Interference immunity on supply lines acc. to IEC 61000-4-5 Interference immunity against conducted variable disturbanc • Interference immunity against conducted variable disturbanc • Interference immunity against conducted variable disturbanc • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011	No 1 Yes No 1 Yes 8 kV 6 kV Yes Yes Yes e induced by high-frequency fields Yes			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2	No 1 Yes No 1 Yes 8 kV 6 kV Yes Yes Yes Yes Yes Yes Yes Yes			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge — Test voltage at contact discharge Interference immunity to cable-borne interference • Interference immunity on supply lines acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. to IEC 61000-4-4 • Interference immunity against voltage surge • Interference immunity against conducted variable disturbanc • Interference immunity against conducted variable disturbanc • Interference immunity against conducted variable disturbanc • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas	No 1 Yes No 1 Yes 8 kV 6 kV Yes Yes Yes e induced by high-frequency fields Yes			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2	No 1 Yes No 1 Yes 8 kV 6 kV Yes Yes Yes Yes Yes Yes Yes Yes			
Potential separation Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • between the channels • between the channels • between the channels • between the channels, in groups of EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge — Test voltage at contact discharge Interference immunity to cable-borne interference • Interference immunity on supply lines acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. to IEC 61000-4-4 • Interference immunity against voltage surge • Interference immunity against conducted variable disturbanc • Interference immunity against conducted variable disturbanc • Interference immunity against conducted variable disturbanc • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas	No 1 Yes No 1 Yes 8 kV 6 kV Yes Yes Yes Yes Yes Yes Yes Yes			

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	-40 °C			
● min. ● max.	-40 °C 70 °C			
max. Air pressure acc. to IEC 60068-2-13				
Operation, min.	795 hPa			
Operation, max.	795 hPa 1 080 hPa			
 Operation, max. 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				
	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	110 mm			
Height	100 mm			
Depth	75 mm			

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Weight, approx.

last modified:

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