## 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

Figuresimilar	
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General information				
Product type designation	CPU 1214C DC/DC/DC			
Firmware version	V4.5			
Engineering with				
<ul> <li>Programming package</li> </ul>	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+				
<ul> <li>Rated value (DC)</li> </ul>	24 V			
<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V			
<ul> <li>permissible range, upper limit (DC)</li> </ul>	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 <sup>2</sup> ·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				
<ul> <li>integrated</li> </ul>	100 kbyte			
expandable	No			
Load memory				
<ul> <li>integrated</li> </ul>	4 Mbyte			
<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	with SIMATIC memory card			
Backup				
• present	Yes			
maintenance-free	Yes			
<ul> <li>without battery</li> </ul>	Yes			
CPU processing times				

for hit operations, two	0.00 ver linetruction				
r 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					
<ul> <li>per priority class, max.</li> </ul>	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				
<ul><li>Backup time</li><li>Deviation per day, max.</li></ul>	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				
<ul> <li>shielded, max.</li> </ul>	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
<ul> <li>for signal "1" rated value</li> <li>for signal "0" residual current, max.</li> </ul>	0.5 A 0.1 mA
• for signal or residual current, max. Output delay with resistive load	
• "0" to "1", max.	1 µs
• "1" to "0", max.	5 µs
Switching frequency	
<ul> <li>of the pulse outputs, with resistive load, max.</li> </ul>	100 kHz
Relay outputs	
Number of relay outputs	0
Cable length	
<ul> <li>shielded, max.</li> </ul>	500 m
<ul> <li>unshielded, max.</li> </ul>	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	
<ul> <li>Resolution with overrange (bit including sign), max.</li> </ul>	10 bit
Integration time, parameterizable	Yes
Conversion time (per channel)	625 µs
Encoder	
Connectable encoders	
	Yes
<ul> <li>Z-wire sensor</li> </ul>	
2-wire sensor	
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
1. Interface Interface type Isolated automatic detection of transmission rate	PROFINET Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autocrossing	PROFINET Yes 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
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; 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         • PROFINET IO Device         • SIMATIC communication         • Web server         • Media redundancy	PROFINET Yes Yes Yes Yes 1 No 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         • Web server         • Media redundancy         PROFINET IO Controller	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
1. Interface         Interface type         Isolated         automatic detection of transmission rate         Autonegotiation         Autorossing         Interface types         • RJ 45 (Ethernet)         • Number of ports         • integrated switch         Protocols         • PROFINET IO Controller         • SIMATIC communication         • Open IE communication         • Web server         • Media redundancy         PROFINET IO Controller         • Transmission rate, max.	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 IO Controller         • Transmission rate, max.         Services	PROFINET 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         — PG/OP communication	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
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; 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         — Isochronous mode         — 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         — Prioritized startup	PROFINET Yes Yes Yes Yes Yes Yes 1 No Yes Yes Yes; Optionally also encrypted Yes Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No No No No 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	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         — Prioritized startup         — Number of IO devices with prioritized startup,	PROFINET Yes Yes Yes Yes Yes Yes 1 No Yes Yes Yes; Optionally also encrypted Yes Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No No No No 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         — Prioritized startup         — Number of IO devices with prioritized startup, max.	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         - 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; Optionally also encrypted Yes No 100 Mbit/s Yes; encryption with TLS V1.3 pre-selected No No No No No No No No 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         — 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

simulationally advanced/deactivated, max. 	— Number of IO Devices that can be	8				
PROFINET IO Device              encomponent set for PROFINET IC, on the number of IO             devices and the quantity of configured user data.            PROFINET IO Device              Services            - PGOP communication          Yes, encryption with TLS V1.3 pre-selected            - HRT         No           - PROFINET OF Device         Yes,            - HRT         No           - PROFINET OF Device         Yes,            - HRT         No           - PROFINET OF Device         Yes,            - Mumber of IO Controllers with shared device,               - Mumber of IO Controllers with shared device,              - Mumber of IO Controllers with shared device,              - Mumber of IO Controllers with shared device,              - TOPIP             - TOPIP             - Drope             - OPP <t< td=""><td>simultaneously activated/deactivated, max.</td><td colspan="5">The minimum value of the undete time also depende on the</td></t<>	simultaneously activated/deactivated, max.	The minimum value of the undete time also depende on the				
devices and the quantity of configured user data.           PROFINET 10 Device           Services	— Updating time					
Services						
		Very energian with TLOV/4.2 are extended				
IRT     No      PROFIDency     Yes      Shared device     Yes      Number of IO Controllers with shared device,     2      Bared device     2       Supports protocol for PROFINET IO     Yes       PROFIBUS     Yes: CM 1243-5 (master) or CM 1242-5 (slave) required       OPC UA     Yes: CM 1243-5 (master) or CM 1242-5 (slave) required       AS-Interface     Yes: CM 1243-2 required       PROFIBUS     Yes: CM 1243-2 required       OPC UA     Sec: CM 1243-2 required       AS-Interface     Yes: CM 1243-2 required       PROFIBUS     Yes       OPC UA     Yes       OPC IDP     Yes       • DPCP     Yes       • DPCP     Yes       Rodination     Yes       • SNMP     Yes       Open Elscommunication     Yes       • Optal length, max.     8 kkyte       • SO-on-ICP (RFC1006)     Yes       • Optal length, max.     8 kkyte       • SD-on-ICP (RFC1006)     Yes       • Optal length, max.     8 kkyte       • So-on-ICP (RFC1006)     Yes       • Optal length, max.     1022 byte       Web server     Yes (data access (read, write, subscribe), method call, runtime license required       • Optal length, max.     1000 ms						
−Number of ID Controllers with shared device, max.         2           Protocols         Supports protocol for PROFINET IO         Yes           PROFISUS         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           OPC UA         Yes, CM 1243-5 (master) or CM 1242-5 (slave) required         OPC UA           OPC UA         Yes, CM 1243-2 required         OPC UA           Protocols (Ensent)         Yes         No           • TCP/IP         Yes         No           • SNMP         Yes         Yes           • DCP         Yes         Yes           OPC UA         Yes         Yes           OPC ID Constructed from PRO         No         No           • SNMP         Yes         Yes           OPC ID Communication         Yes         Yes           • Data length, max.         8 ktyle         No           • SOLAN         Yes         Yes           OPC ID Communication         Yes         Yes           • Data length, max.         8 ktyle         Yes           • Data length, max.         1472 byle         Yes           • UPC ID Server         Yes, 'Basic' license requ						
max. Supports protocol for PROFINET 10 Yes  PROFIBade  PROTEBUS Yes: CM 1243-5 (master) or CM 1242-5 (slave) required  PROTEBUS Yes: CM 1243-5 (master) or CM 1242-5 (slave) required  PROTEBUS Yes: CM 1243-2 required  Protocols (Ethernet)  TCP/P Yes  DFCP Yes  DFCP Yes  DCP						
Supports protocol for PROFINET IO         Yes           PROFIsate         No           PROFISATE         No           PROFISATE         Yes, CM 1243-5 (slave) required           OPC UA         Yes, CM 1243-2 required           Protocols (Ethernet)         Yes           • TCP/IP         Yes           • DLCP         Yes           • DLCP         Yes           • DCP         Yes           • DCP         Yes           • MRP         Yes           • MRP         Yes           • OPCIP         Yes           • StiMATIC communication         Yes           • STrouting         Yes           Open IE communication         Yes           • TCP/IP         Yes           • Data length, max.         8 kbyte           • IDO - Data length, max.         8 kbyte           • Data length, max.         1472 byte           Web server         Yes           • Data length, max.         1472 byte           Web server         Yes           • CPIP         Yes           • CPU UA Server         Yes           • OPC UA         Yes           • OPC UA Server         Yes		-				
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 (master) or CM 1242-5 (slave) required           Protocols (Ethernet)         Yes: CM 1243-2 (master) or CM 1242-5 (slave) required           • DHOP         Yes           • DHOP         Yes           • DHOP         Yes           • DHOP         Yes           • DECP         Yes           • DECP         Yes           • LDP         Yes           Redundancy mode         Media redundancy           - MRP         No           SIMMIC communication         Yes           • Strouting         Yes           Open IC 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.         1422 byte           • UDP         Yes           - Data length, max.         1422 byte           • Nonher of sab	Protocols					
PROFIBUS     Yes: CM 1243-5 (master) or CM 1242-5 (slave) required       OPC UA     Yes: CD 1243-2 (required       Protocols (Ethernet)     Yes: CM 1243-2 (required       • CP/P     Yes: CM 1243-2 (required       • DHCP     No       • SIMAP     Yes       • SIMAP     Yes       • LDP     Yes       • CP     Yes       • LDP     Yes       • MRP     No       - MRP     No       - MRPD     No       SIMATIC communication     -       • TCP/IP     Yes       • Data length, max.     8 kbyte       • ISO-on-CPC (RFC1006)     Yes       • Data length, max.     1472 byte       • Web server     Yes       • Data length, max.     1472 byte       • 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       • Number of subscriptions per session, max.     1       • Application authentication     'anonymoust' or by user name & password       • Number of subscriptions per session, max.     5       • Number of subscriptions per session, max.     5       • Number of server interfaces, max.     20	Supports protocol for PROFINET IO	Yes				
OPC UA     Yes; OPC UA Server       AS-Interface     Yes; CPC UA Server       Protocols (Ethernet)     Yes; CPC UA Server       • TCP/IP     Yes; CPC UA Server       • OHCP     No       • SIMAP     Yes       • ULOP     Yes       • ULOP     Yes       • Redundancy mode     Media redundancy       - MRP     No       - MRPD     No       SIMATIC communication     Yes       • ST routing     Yes       Open IC communication     Yes       • Data length, max.     8 kbyte       • IDP     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 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 required       • Number of server methods,	PROFIsafe	No				
AS-Interface     Yes; CM 1243-2 required       Protocols (Ehrenet)     • TCP/IP       • TCP/IP     Yes       • DHCP     No       • SINAP     Yes       • DCP     Yes       • MRP     No       - MRPD     No       - MRPD     No       ST 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.     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.     8 kbyte       • UDP     Yes       - Application authentication     Yes; 'Basic" license required       • OPC UA     Yes       • User aut	PROFIBUS	Yes; CM 1243-5 (master) or CM 1242-5 (slave) required				
Protocols (Ethemet)     Yes       • TCP/IP     Yes       • DHCP     No       • SIMAP     Yes       • LDP     Yes       • LDP     Yes       • LDP     Yes       • Media redundancy mode     Media redundancy      MRP     No      MRPD     No       SIMATIC communication     Yes       • TCP/IP     Yes       Open Ic Communication     Yes       • ISO-on-TCP (RFC1006)     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       • UDP     Yes       • UDP     Yes       • OPC UA     Yes       OPC UA     Yes       OPC UA Server     Yes (data access (read, write, subscribe), method call, runtime license required       - Application authentication     Available security policies: None, Basic 258Rsa15, Basic 256Rsa15, Basic 256Rsa15, Basic 256Rsa15, Basic 256Rsa26       - User authentication     "anonymous" or by user name & password       - Number of server methods, max.     20       <	OPC UA	Yes; OPC UA Server				
• ICP/IP     Yes       • DHCP     No       • SIMP     Yes       • DCP     Yes       • LCP     Yes       Redundancy mode     No      MRP     No      MRPD     No       SIMATIC communication     -       • S7 routing     Yes       Open IE communication     -       • TCP/IP     Yes       - Data length, max.     8 kbyte       • IDP     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.     9 Kes       • UDP     Yes       - Data length, max.     1472 byte       Web server     Yes       • Upported     Yes       • Upported     Yes       • User-defined websites     Yes       OPC UA     Server       • Application authentication     Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Rsa256       - User authentication		Yes; CM 1243-2 required				
• DHCPNo• SINUPYes• LDPYes• Redundancy modeYesMedia redundancyImage: Strate Str		N/				
• SNMPYes• DCPYes• MCPYesRedundancy mode•Media redundancy•- MRPNo- MRPNo- MRPONoSIMATIC communication•• TCP/IPYes• Data length, max.8 kbyte• ICP/IPYes- Data length, max.8 kbyte• UDPYes- Data length, max.8 kbyte• UDPYes- Data length, max.1 472 byteWeb server•• UDPYes- Data length, max.1 472 byte• UDPYes• UDPYes• UDP determineYes• Number of sessions, max.10• Number of sessions, max.5• Number of server interfaces, max.20• Number of server interfaces, max.20• Number of onsict for user-defined server2000• Num						
<ul> <li>DCP</li> <li>Ves</li> <li>Pedundancy mode</li> <li>Media redundancy</li> <li>MRP</li> <li>MRP</li> <li>MRPD</li> <li>No</li> <li>StMATIC communication</li> <li>SToromunication</li> <li>Stronger (red, max, ecommended max, ecommended max, exported for some some some some some some some some</li></ul>						
• LLDP     Yes       Redundancy mode						
Redundancy mode         MRP       No        MRPD       No         SIMATIC communication       • 57 routing         • 57 routing       Yes         Open IIE communication       • 1000         • TCPJP       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       • UBP         • User-defined websites       Yes         OPC UA       Yes, "Basic" 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 authentication       "anonymous" or by user name & password         - Number of subscriptions per session, max.       5         - Sampling interval, min.       200         - Number of server interfaces, max.       2         - Number of server interfaces, max.       2         - Number of server interfaces, max.       2 </td <td></td> <td></td>						
Media redundancy       - MRPD     No       SMATIC communication     Ves       STrouting     Yes       Open IE communication     Kkyte       - Data length, max.     8 kkyte       - ISO-on-TCP (RFC1006)     Yes       - Data length, max.     8 kkyte       - UDP     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       - Application authentication     Yes: "Basic" license required       - Application authentication     Yes: data access (read, write, subscribe), method call, runtime license required       - Mumber of sessions, max.     10       - Number of subscriptions per session, max.     5       - Sampling interval, min.     200 ms       - Number of server interfaces, max.     20       - 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       - Number of nodes for user-defined server interfaces, max.     2       - Number of nodes for user-defined server interfaces, max.     2		165				
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     -       • Supported     Yes       • User-defined websites     Yes       OPC UA     -       • Runtime license required     Yes; "Basic" license required       • OPC UA     -       • Runtime license required     Yes; "Basic" license required       • OPC UA     -       • Runtime license required     Yes; "Basic" license required       • OPC UA     -       • User authentication     Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Bsa256       - User authentication     "anonymous" or by user name & password       - Number of subscriptions per session, max.     5       - Sampling interval, min.     200       - Number of server interfaces, max.     2       - Number of nonitored items, recommended max.     2       - Number of server interfaces, max.     2       - Number of nodes for user						
MRPD     No       SIMATIC communication     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       - Data length, max.     1472 byte       Web server     Yes       - Data length ax     Yes       - Data length     Yes       - OPC UA     Yes       - Runtime license required     Yes; "basic" license required       - Application authentication     Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Bsa15, Basic2	· · · · · · · · · · · · · · · · · · ·	No				
• \$7 routing     Yes       Open IE communication     ************************************						
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.       1 472 byte         Web server       Yes         • User-defined websites       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 required         • Application authentication       Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256         — User authentication       "anonymous" or by user name & password         • Number of subscriptions per session, max.       5         • Sampling interval, min.       100 ms         • Number of server methods, ma	SIMATIC communication					
• TCP/IP       Yes         — Data length, max.       8 kbyte         • ISC-on-TCP (RFC1006)       Yes         — Data length, max.       8 kbyte         • UDP       Yes         — Data length, max.       1 472 byte         Web server       1 472 byte         • supported       Yes         • supported       Yes         • UDP       Yes         • supported       Yes         • CPC UA       Yes         • 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, Basic256Rsa256         — User authentication       "anonymous" or by user name & password         — Number of subscriptions per session, max.       10         — Number of server methods, max.       20         — Number of server methods, max.       20         — Number of server interfaces, max.       2         — Number of onolitored items, recommended max.       1000         — Number of nonitored items, recommended max.       2000         — Number of nodes for user-defined server interfaces, max.       2         — Number of n	S7 routing	Yes				
Data length, max.8 kbyteISO-on-TCP (RFC1006)Yes Data length, max.8 kbyteUDPYes Data length, max.1 472 byteWeb server• Data length, max.1 472 byteWeb server• User-defined websitesYesUser-defined websitesYesOPC UAYes; "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, Basic256R	Open IE communication					
· ISO-on-TCP (RFC1006)Yes- Data length, max.8 kbyte· UDPYes- Data length, max.1 472 byteWeb server/• supportedYes• 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 sessions, max.100 ms- Sampling interval, min.200 ms- Number of server methods, max.20- Number of server interfaces, max.2- Number of server interfaces, max.2	• TCP/IP	Yes				
Data length, max.8 kbyte· UDPYes Data length, max.1472 byteWeb server• supportedYes• User-defined websitesYesOPC UAYes; "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 server methods, max.20- Number of server methods, max.20- Number of server methods, max.20- Number of server interfaces, max.2 000- Number of server interfaces, max.2 000- Number of server interfaces, max.2 000- Number of nodes for user-defined server interfaces, max.2 000- SupportedYes• MODBUSYes• MODBUSYes• SupportedYes	— Data length, max.	8 kbyte				
• UDP       Yes         - Data length, max.       1 472 byte         Web server       -         • supported       Yes         • USer-defined websites       Yes         OPC UA       Yes; "Basic" license required         • Runtime license required       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       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         - Number of server methods, max.       20         - 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         - Number of nodes for user-defined server interfaces, max.       2         • MODBUS       Yes         communication functions / header       Yes <td></td> <td>Yes</td>		Yes				
— Data length, max.       1 472 byte         Web server       supported         • supported       Yes         • User-defined websites       Yes         OPC UA	-	8 kbyte				
Web server         • supported       Yes         • User-defined websites       Yes         OPC UA       • Runtime license required         • OPC UA Server       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 server interfaces, max.       2         - Number of nonitored items, recommended max.       1000         - Number of server interfaces, max.       2         - Number of nonitored items, recommended max.       1000         - Number of nonitored items, recommended max.       1000         - Number of nonitored items, recommended max.       2         - Number of nonitored items, recommended max.       2         • MODBUS       Yes						
• 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       available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256         - User authentication       available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256         - User authentication       available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256         - User authentication       available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256         - Number of sessions, max.       10         - Number of sessions, max.       10         - Number of subscriptions per session, max.       2         - 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 nodes for user-defined server interfaces, max.       2         - MODBUS       Yes         communication functions / header <td>-</td> <td>1 472 byte</td>	-	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     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.     200 ms       - Number of server methods, max.     20       - Number of server interfaces, max.     2       - Number of server interfaces, max.     2       - Number of ondes for user-defined server interfaces, max.     2 000       - Number of nodes for user-defined server interfaces, max.     2 000       • MODBUS     Yes       communication functions / header       S7 communication     Yes		Vec				
OPC UA <ul> <li>Runtime license required</li> <li>OPC UA Server</li> <li>Application authentication</li> <li>Application authentication</li> <li>Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256</li> <li>User authentication</li> <li>Number of sessions, max.</li> <li>Number of subscriptions per session, max.</li> <li>Sampling interval, min.</li> <li>Number of server methods, max.</li> <li>Number of server methods, max.</li> <li>Number of server methods, max.</li> <li>Number of server interfaces, max.</li> <li>Number of server interfaces, max.</li> <li>Number of nodes for user-defined server interfaces, max.</li> </ul> <li>Further protocols</li> <li>MODBUS</li> <li>Yes</li> <li>Communication</li> <li>Supported</li>						
• 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 methods, max.       20         - Number of nonitored items, recommended max.       1000         - Number of notes 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         - Number of nodes for user-defined server interfaces, max.       2         - MoDBUS       Yes         communication functions / header       Yes		165				
• 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 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         - Number of nodes for user-defined server interfaces, max.       2         - MODBUS       Yes         communication functions / header       Yes		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 methods, max.20- Number of server interfaces, max.2- 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• MODBUSYescommunicationYesS7 communicationYes		Yes; data access (read, write, subscribe), method call, runtime license				
User authentication"anonymous" or by user name & passwordNumber of sessions, max.10Number of subscriptions per session, max.5Sampling interval, min.100 msPublishing interval, min.200 msNumber of server methods, max.20Number of monitored items, recommended max.1 000Number of server interfaces, max.2Number of server interfaces, max.2Number of nodes for user-defined server interfaces, max.2 000Number of functions / headerYes	— Application authentication	Available security policies: None, Basic128Rsa15, Basic256Rsa15,				
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 Sumber of nodes for user-defined server interfaces, max.2 Sumber of nodes for user-defined server interfaces, max.2 SupportedYes SupportedYes	- User authentication					
- 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 nodes for user-defined server arteriates, max.2 000Further protocols2 000• MODBUSYescommunication functions / header§7 communicationYes						
Sampling interval, min.100 ms Publishing interval, min.200 ms Number of server methods, max.20 Number of monitored items, recommended1 000max Number of server interfaces, max.2 Number of nodes for user-defined server interfaces, max.2 000Further protocolsYescommunication functions / headerYesS7 communication • supportedYes						
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						
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 / header\$7 communication • supportedYes						
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 / header57 communication• supportedYes	-					
max.Pumber of server interfaces, max.2- Number of nodes for user-defined server interfaces, max.2 000Further protocols2 000• MODBUSYescommunication functions / header57 communication• supportedYes						
Number of nodes for user-defined server interfaces, max.     2 000       Further protocols	max.					
interfaces, max.       Further protocols       • MODBUS     Yes       communication functions / header       S7 communication       • supported     Yes						
Further protocols       • MODBUS       Yes       communication functions / header       S7 communication       • supported     Yes		2 000				
MODBUS Yes  communication functions / header  S7 communication      supported Yes						
S7 communication • supported Yes	· · · · · · · · · · · · · · · · · · ·	Yes				
• supported Yes	communication functions / header					
	S7 communication					
• as server Yes	supported	Yes				
	• as server	Yes				

• as client	Yes			
<ul> <li>User data per job, max.</li> </ul>	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				
<ul> <li>Status/control variable</li> </ul>	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	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	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				
<ul> <li>horizontal installation, min.</li> </ul>	-20 °C				
<ul> <li>horizontal installation, max.</li> </ul>	60 °C				
<ul> <li>vertical installation, min.</li> </ul>	-20 °C				
<ul> <li>vertical installation, max.</li> </ul>	50 °C				
Ambient temperature during storage/transportation					
• min.	-40 °C				
• max.	70 °C				
Air pressure acc. to IEC 60068-2-13	70510				
• Operation, min.	795 hPa				
• Operation, max.	1 080 hPa				
Storage/transport, min.	660 hPa				
Storage/transport, max.	1 080 hPa				
Altitude during operation relating to sea level	4 999				
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. Vibrations	95 %; no condensation				
Vibrations     Vibration resistance during operation acc. to IEC     60068-2-6	2 g (m/s <sup>2</sup> ) wall mounting, 1 g (m/s <sup>2</sup> ) DIN rail				
<ul> <li>Operation, tested according to IEC 60068-2-6</li> </ul>	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					
<ul> <li>SO2 at RH &lt; 60% without condensation</li> </ul>	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free				
configuration / header					
configuration / programming / header Programming language					
— LAD	Yes				
— FBD	Yes				
— SCL	Yes				
Know-how protection					
<ul> <li>User program protection/password protection</li> </ul>	Yes				
Copy protection	Yes				
Block protection	Yes				
Access protection					
<ul> <li>protection of confidential configuration data</li> </ul>	Yes				
<ul> <li>Protection level: Write protection</li> </ul>	Yes				
<ul> <li>Protection level: Read/write protection</li> </ul>	Yes				
<ul> <li>Protection level: Complete protection</li> </ul>	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:

415 g

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