SIEMENS

Data sheet

6ES7215-1HG40-0XB0

SIMATIC S7-1200, CPU 1215C, compact CPU, DC/DC/relay, 2 PROFINET ports, onboard I/O: 14 DI 24 V DC; 10 DO relay 2 A, 2 AI 0-10 V DC, 2 AO 0-20 mA DC, Power supply: DC 20.4-28.8 V DC, Program/data memory 125 KB



General information	
Product type designation	CPU 1215C DC/DC/relay
Firmware version	V4.2
Engineering with	
 Programming package 	STEP 7 V14 or higher
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Load voltage L+	
 Rated value (DC) 	24 V
 permissible range, lower limit (DC) 	20.4 V
• permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption (rated value)	500 mA; CPU only
Current consumption, max.	1 500 mA; CPU with all expansion modules

Inrush current, max.	12 A; at 28.8 V DC
l²t	0.8 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	40.00
Power loss, typ.	12 W
Memory	
Work memory	
• integrated	125 kbyte
• expandable	No
Load memory	
• integrated	4 Mbyte
 Plug-in (SIMATIC Memory Card), max. 	with SIMATIC memory card
Backup	
• present	Yes
maintenance-free	Yes
• without battery	Yes
CPU processing times	
for bit operations, typ.	0.08 μs; / instruction
for word operations, typ.	1.7 μs; / instruction
for floating point arithmetic, typ.	2.3 μs; / instruction
CPU-blocks	
Number of blocks (total)	DBs, FCs, FBs, counters and timers. The maximum number of
	addressable blocks ranges from 1 to 65535. There is no
	restriction, the entire working memory can be used
OB	Limited only by DAM for and
 Number, max. 	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags),	10 kbyte
max.	
Flag	
• Number, 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	
 Hardware clock (real-time) 	Yes
Backup time	480 h; Typical
 Deviation per day, max. 	±60 s/month at 25 °C
Digital inputs	
Number of digital inputs	14; Integrated
 of which inputs usable for technological functions 	6; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	14
Input voltage	
• Rated value (DC)	24 V
● for signal "0"	5 V DC at 1 mA
● for signal "1"	15 V DC at 2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
for interrupt inputs	
— parameterizable	Yes
for technological functions	
— parameterizable	Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz
Cable length	
• shielded, max.	500 m; 50 m for technological functions
• unshielded, max.	300 m; for technological functions: No
Digital outputs	
Number of digital outputs	10; Relays
Switching capacity of the outputs	
 with resistive load, max. 	2 A
• on lamp load, max.	30 W with DC, 200 W with AC
Output delay with resistive load	

• "0" to "1", max.	10 ms; max.
● "1" to "0", max.	10 ms; max.
Relay outputs	
 Number of relay outputs 	10
 Number of operating cycles, max. 	mechanically 10 million, at rated load voltage 100 000
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
	≥100k ohms
— Input resistance (0 to 10 V)	
Cable length	100 mitwisted and shielded
 shielded, max. 	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	2
Output ranges, current	
	N .
• 0 to 20 mA	Yes
	Yes
0 to 20 mA Analog value generation for the inputs Integration and conversion time/resolution per channel	Yes
Analog value generation for the inputs	Yes 10 bit
Analog value generation for the inputs Integration and conversion time/resolution per channel	
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign),	
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.	10 bit
 Analog value generation for the inputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Integration time, parameterizable Conversion time (per channel) 	10 bit Yes
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable	10 bit Yes
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Analog value generation for the outputs Integration and conversion time/resolution per channel	10 bit Yes
 Analog value generation for the inputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Integration time, parameterizable Conversion time (per channel) Analog value generation for the outputs	10 bit Yes 625 μs
 Analog value generation for the inputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Integration time, parameterizable Conversion time (per channel) Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. 	10 bit Yes 625 μs
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign),	10 bit Yes 625 μs
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder	10 bit Yes 625 μs
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor	10 bit Yes 625 μs 10 bit
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor 1. Interface	10 bit Yes 625 μs 10 bit
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type	10 bit Yes 625 μs 10 bit Yes Yes
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor Interface Interface type Physics	10 bit Yes 625 μs 10 bit Yes Yes
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type Physics Isolated	10 bit Yes 625 μs 10 bit Yes PROFINET Ethernet Yes
Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Connectable encoders • 2-wire sensor Interface Interface type Physics	10 bit Yes 625 μs 10 bit Yes Yes

Autocrossing	Yes
Interface types	
Number of ports	2
• integrated switch	Yes
Protocols	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
 SIMATIC communication 	Yes
Open IE communication	Yes
• Web server	Yes
Media redundancy	Yes; as MRP client
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes
— S7 routing	Yes
— Isochronous mode	No
— Open IE communication	Yes
— IRT	No
— MRP	Yes; as MRP client
— MRPD	No
- PROFlenergy	No
— Prioritized startup	Yes
 Number of IO devices with prioritized 	16
startup, max.	
 — Number of connectable IO Devices, max. 	16
 — Number of connectable IO Devices for RT, 	16
max.	
— of which in line, max.	16
 Activation/deactivation of IO Devices 	Yes
— Number of IO Devices that can be	8
simultaneously activated/deactivated, max.	The selection of the condition from the descent of the
— Updating time	The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number
	of IO devices and the quantity of configured user data.
PROFINET IO Device	
Services	
— PG/OP communication	Yes
— S7 routing	Yes
— Isochronous mode	No
— Open IE communication	Yes
— IRT	No

— MRP	Yes; as MRP client
— MRPD	No
— PROFlenergy	Yes
— Shared device	Yes
— Number of IO Controllers with shared device, max.	2

Protocols	
Supports protocol for PROFINET IO	Yes
PROFIBUS	Yes; CM 1243-5 (master) or CM 1242-5 (slave) required
AS-Interface	Yes; CM 1243-2 required
Protocols (Ethernet)	
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	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.	1 472 byte
Web server	
• supported	Yes
 User-defined websites 	Yes
Further protocols	
• MODBUS	Yes
Communication functions	
S7 communication	
supported	Yes
• as server	Yes
• as client	Yes
• User data per job, max.	See online help (S7 communication, user data size)
Number of connections	
• overall	16; dynamically
Test commissioning functions	
Status/control	
Status/control variable	Yes
• Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters

Forcing Yes Jeagnostic buffer versent Yes Traces Ves Number of configurable Traces 2 Memory size per trace, max. 512 kbyte Interrupts/diagnostics/status information Diagnostics indication LED Ves RUNSTOP LED Yes RUNSTOP LED Yes MAINT LED Yes Mumber of counters Ocunting frequency (counter) max. 100 kHz Frequency measurement Yes Counting frequency (counter) max. 100 kHz Frequency measurement Yes Number of positioning axes, max. 8 Number of positioning axes via pulse-direction Interface Plo controller Ves V	Forcing	
• present Yes Traces 2 • Number of configurable Traces 2 • Memory size per trace, max. 512 kbyte Interrupted/diagnostics/status information 512 kbyte Diagnostics indication LED Yes • ERROR LED Yes • Main't LED Yes • Main't LED Yes • Counting frequency (counter) max. 6 Counting frequency (counter) max. 100 kHz Frequency measurement Yes controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 9 PID contoller Yes Number of position-controlled positioning axes, max. 100 kHz Potential separation digital inputs 500V AC for 1 minute PID contoller Yes Number of alarm inputs 500V AC for 1 minute • Potential separation digital inputs 500V AC for 1 minute • Detween the channels, in groups of 1 • Potential separation digital outputs Relays	-	Yes
Process 2 • Number of configurable Traces 2 • Memory size per trace, max. 512 kbyte Diagnostics indication LED 512 kbyte • RUNSTOP LED Yes • ERROR LED Yes • MAINT LED Yes • MAINT LED Yes • MAINT LED Yes • Counting frequency (counter) max. 100 kHz Frequency measurement Yes • Controlled positioning axes, max. 8 Number of position gaxes via pulse-direction interface Up to 4 with SB 1222 PID controller Yes POtential separation digital inputs 500V AC for 1 minute • Potential separation digital nputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Relays • between the channels, in groups of 2 EMC Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 • between the channels, in groups of Yes • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 KV	Diagnostic buffer	
• Number of configurable Traces 2 • Memory size per trace, max. 512 kbyte Interrupts/diagnostics/status information Diagnostics indication LED • • RUNNSTOP LED Yes • ERROR LED Yes • MAINT LED Yes • Integrated Functions 6 • Counting frequency (counter) max. 100 kHz • Frequency measurement Yes • Outoble opsitioning axes via pulse-direction Up to 4 with SB 1222 • Interface Yes • Potential separation digital inputs 500V AC for 1 minute • Detential separation digital inputs 500V AC for 1 minute • Detential separation digital outputs Relays • between the channels, in groups of 1 • Detential separation digital outputs Relays • between the channels, in groups of 2 <t< td=""><td>• present</td><td>Yes</td></t<>	• present	Yes
Memory size per trace, max. 512 kbyte Interrupts//diagnostics/status information	Traces	
Interrupts/diagnostics/status information Diagnostics indication LED • RUN/STOP LED Yes • ERROR LED Yes • MAINT LED Yes Integrated Functions 6 Counting frequency (counter) max. 100 kHz Frequency measurement Yes controlled positioning Yes Number of position-controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 10 to 4 with SB 1222 • Interface Yes PID controller Yes PID controller Yes Number of position ofigital inputs 4 • Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 10 • Potential separation digital outputs Relays • between the channels No • between the channels, in groups of 2 • Detertiel separation digital outputs Yes • between the channels, in groups of 2 • Detertiel separation digital outputs Relays • between the channels No • between the channels Yes • Interference immunity against discharge of static electricity Yes	 Number of configurable Traces 	2
Diagnostics indication LED Yes • RUN/STOP LED Yes • ERROR LED Yes • MAINT LED Yes Number of counters 6 Counting frequency (counter) max. 100 kHz Frequency measurement Yes controlled positioning Yes Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction interface Up to 4 with SB 1222 PID controller Yes Number of alarm inputs 4 Potential separation digital inputs 500V AC for 1 minute • Detential separation digital outputs Felays • Potential separation digital outputs Selays • between the channels, in groups of 1 • Detential separation digital outputs Relays • between the channels, in groups of 2 EMC Interference immunity against discharge of static electricity acc. to EC 66 1000-4-2 • Test voltage at air discharge 6 kV Interference immunity to cable-borne interference Yes • Interference immunity to signal cables acc. to Yes	 Memory size per trace, max. 	512 kbyte
Diagnostics indication LED Yes • RUN/STOP LED Yes • ERROR LED Yes • MAINT LED Yes Number of counters 6 Counting frequency (counter) max. 100 kHz Frequency measurement Yes controlled positioning Yes Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction interface Up to 4 with SB 1222 PID controller Yes Number of alarm inputs 4 Potential separation digital inputs 500V AC for 1 minute • Detential separation digital outputs Felays • Potential separation digital outputs Selays • between the channels, in groups of 1 • Detential separation digital outputs Relays • between the channels, in groups of 2 EMC Interference immunity against discharge of static electricity acc. to EC 66 1000-4-2 • Test voltage at air discharge 6 kV Interference immunity to cable-borne interference Yes • Interference immunity to signal cables acc. to Yes	Interrupts/diagnostics/status information	
• ERROR LED Yes • MAINT LED Yes Number of counters 6 Counting frequency (counter) max. 100 kHz Frequency measurement Yes controlled positioning Yes Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction Up to 4 with SB 1222 interface Yes PID controller Yes Number of alarm inputs 4 Potential separation digital inputs 500V AC for 1 minute • Detential separation digital inputs 500V AC for 1 minute • Detential separation digital outputs Relays • Detential separation digital outputs Setween the channels, in groups of • Detential separation digital outputs Potential separation digital outputs • Detential separation digital outputs Relays • between the channels, in groups of 2 Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 8 kV • Test voltage at air discharge 8 kV • Test voltage at air discharge 6 kV Interference immunity to cable-borne interference Yes		
MAINT LED Yes Integrated Functions 6 Counting frequency (counter) max. 100 KHz Frequency measurement Yes controlled positioning Yes Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction interface Up to 4 with SB 1222 PID controller Yes Number of alarm inputs 4 Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Solv AC for 1 minute • between the channels, in groups of 2 Potential separation digital outputs Relays • between the channels, in groups of 2 Potential separation digital outputs No • between the channels, in groups of 2 Potential separation digital outputs Relays • between the channels, in groups of 2 • Difference immunity against discharge of static electricity Yes • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 8 kV • Test voltage at air discharge 6 kV Interference immunity to cable-borne interference 6 kV Interference immunity to supply lines acc. to Yes <td>RUN/STOP LED</td> <td>Yes</td>	RUN/STOP LED	Yes
Integrated Functions Number of counters 6 Counting frequency (counter) max. 100 kHz Frequency measurement Yes controlled positioning Yes Number of position-controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 9 Position-controlled positioning axes via pulse-direction interface 10 of 4 with SB 1222 Pill controller Yes Number of alarm inputs 4 Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Relays • between the channels, in groups of 2 Potential separation digital outputs No • between the channels, in groups of 2 Interference immunity against discharge of static electricty 1 • Interference immunity against discharge of static electricty 2 • Test voltage at air discharge 8 kV • Test voltage	• ERROR LED	Yes
Number of counters 6 Counting frequency (counter) max. 100 kHz Frequency measurement Yes controlled positioning Yes Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction interface Up to 4 with SB 1222 PID controller Yes Number of alarm inputs 4 Potential separation Yes Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Relays • between the channels, in groups of 2 EMC No Interference immunity against discharge of static electricity Yes Interference immunity against discharge of static electricity 8 kV - Test voltage at air discharge 6 kV Interference immunity to cable-borne interference 6 kV Interference immunity on signal cables acc. to Yes	MAINT LED	Yes
Counting frequency (counter) max. 100 kHz Frequency measurement Yes controlled positioning Yes Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction interface Up to 4 with SB 1222 PID controller Yes Number of alarm inputs 4 Potential separation digital inputs 500V AC for 1 minute • Potential separation digital outputs 1 • Potential separation digital outputs Solov AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Relays • between the channels, in groups of 2 Interference immunity against discharge of static electricity Yes • between the channels, in groups of 2 Interference immunity against discharge of static electricity acc. to IEC 6 1000-4-2 Yes • Test voltage at air discharge 6 kV Interference immunity to cable-borne interference 6 kV Interference immunity to cable-borne interference Yes • Interference immunity on signal cables acc. to Yes	Integrated Functions	
Frequency measurement Yes controlled positioning Yes Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction interface Up to 4 with SB 1222 PID controller Yes Number of alarm inputs 4 Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Relays • between the channels, in groups of 2 EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity Yes - Test voltage at air discharge 8 kV - Test voltage at air discharge 8 kV - Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference Yes • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes		6
controlled positioning Yes Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction interface Up to 4 with SB 1222 PID controller Yes Number of alarm inputs 4 Potential separation 4 Potential separation digital inputs 500V AC for 1 minute • Potential separation digital outputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Felays • between the channels No • between the channels No • between the channels, in groups of 2 EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Yes • Test voltage at air discharge 6 kV Interference immunity to cable-borne interference 6 kV Interference immunity on supply lines acc. to IEC 61000-4-4 Yes • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes	Counting frequency (counter) max.	100 kHz
Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction interface Up to 4 with SB 1222 PID controller Yes Number of alarm inputs 4 Potential separation of gital inputs Potential separation digital inputs 500V AC for 1 minute • Potential separation digital outputs 500V AC for 1 minute • between the channels, in groups of 1 • Potential separation digital outputs Relays • Potential separation digital outputs Relays • between the channels, in groups of 2 • Potential separation digital outputs Relays • between the channels, in groups of 2 • Interference immunity against discharge of static electricity 1 • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 4 • Test voltage at air discharge 6 kV Interference immunity to cable-borne interference 1 • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes	Frequency measurement	Yes
Number of positioning axes via pulse-direction Up to 4 with SB 1222 PilD controller Yes Number of alarm inputs 4 Potential separation Potential separation digital inputs Potential separation digital inputs 500V AC for 1 minute Potential separation digital outputs 500V AC for 1 minute Potential separation digital outputs Relays between the channels, in groups of 2 EMC Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 8 kV — Test voltage at air discharge 8 kV — Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference 9 kV Interference immunity on supply lines acc. to IEC 61000-4-4 Yes	controlled positioning	Yes
interface Yes PUD controller Yes Number of alarm inputs 4 Potential separation digital inputs Potential separation digital inputs 500V AC for 1 minute • Potential separation digital outputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Relays • Potential separation digital outputs Relays • between the channels, in groups of 2 Potential separation digital outputs Relays • between the channels, in groups of 2 EMC Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Yes • Test voltage at air discharge 8 kV • Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference Yes • Interference immunity to cable-borne interference Yes	Number of position-controlled positioning axes, max.	8
Number of alarm inputs 4 Potential separation Potential separation digital inputs • Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Relays • Potential separation digital outputs No • between the channels No • between the channels, in groups of 2 • Interference immunity against discharge of static electrictiv • • Interference immunity against discharge of static electrictiv • • Interference immunity against discharge 8 kV • Test voltage at air discharge 8 kV • Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference • • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes • Interference immunity on signal cables acc. to Yes		Up to 4 with SB 1222
Potential separation digital inputs Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs • Potential separation digital outputs Relays • between the channels No • between the channels, in groups of 2 EMC Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 • Interference immunity against discharge 8 kV • Test voltage at air discharge 8 kV • Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference Yees • Interference immunity on supply lines acc. to IEC 61000-4-4 Yees • Interference immunity on supply lines acc. to IEC 61000-4-4 Yees	PID controller	Yes
Potential separation digital inputs 500V AC for 1 minute • Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Relays • Potential separation digital outputs Relays • between the channels No • between the channels, in groups of 2 EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity Yes • Interference immunity against discharge 8 kV — Test voltage at air discharge 6 kV Interference immunity to cable-borne interference Yes • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes	Number of alarm inputs	4
• Potential separation digital inputs500V AC for 1 minute• between the channels, in groups of1• Potential separation digital outputsRelays• Potential separation digital outputsNo• between the channels2• between the channels, in groups of2• between the channels, in groups of2• between the channels, in groups of2• Interference immunity against discharge of static electricity acc. to IEC 61000-4-2Yes• Interference immunity against discharge8 kV• Test voltage at air discharge6 kVInterference immunity to cable-borne interferenceYes• Interference immunity on supply lines acc. to IEC 61000-4-4Yes• Interference immunity on supply lines acc. to IEC 61000-4-4Yes• Interference immunity on signal cables acc. to IEC 61000-4-4Yes		
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Potential separation digital outputs Relays • Potential separation digital outputs Relays • between the channels No • between the channels, in groups of 2 EMC Emetain the channels discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Yes - Test voltage at air discharge 8 kV - Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference Yes • Interference immunity on supply lines acc. to IEC 61000-4-2 Yes • Interference immunity to cable-borne interference Yes • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes	 Potential separation digital inputs 	500V AC for 1 minute
• Potential separation digital outputsRelays• between the channelsNo• between the channels, in groups of2EMCInterference immunity against discharge of static electricity acc. to IEC 61000-4-2Yes- Test voltage at air discharge8 kV- Test voltage at contact discharge6 kVInterference immunity to cable-borne interferenceYes• Interference immunity on supply lines acc. to IEC 61000-4-4Yes• Interference immunity on supply lines acc. to IEC 61000-4-4Yes• Interference immunity on signal cables acc. to YesYes	 between the channels, in groups of 	1
• between the channelsNo• between the channels, in groups of2EMCInterference immunity against discharge of static electricity• Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air dischargeYes- Test voltage at air discharge8 kV 6 kVInterference immunity to cable-borne interference6 kVInterference immunity on supply lines acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. toYes	Potential separation digital outputs	
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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 8 kV Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference Yes • Interference immunity on supply lines acc. to IEC 61000-4-2 Yes	 between the channels 	No
Interference immunity against discharge of static electricity Yes • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Yes - Test voltage at air discharge 8 kV - Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference Yes • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes • Interference immunity on signal cables acc. to Yes	• between the channels, in groups of	2
 Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Test voltage at air discharge KV Test voltage at contact discharge KV Interference immunity to cable-borne interference Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity on signal cables acc. to Yes 	EMC	
static electricity acc. to IEC 61000-4-2 8 kV — Test voltage at air discharge 8 kV — Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference 9 kes • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes • Interference immunity on signal cables acc. to Yes	Interference immunity against discharge of static electri	city
		Yes
Interference immunity to cable-borne interference Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity on signal cables acc. to Yes	— Test voltage at air discharge	8 kV
 Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity on signal cables acc. to Yes 	— Test voltage at contact discharge	6 kV
IEC 61000-4-4 • Interference immunity on signal cables acc. to Yes	Interference immunity to cable-borne interference	
		Yes
		Yes

Interference immunity against voltage surge		
Interference immunity on supply lines acc. to	Yes	
IEC 61000-4-5		
Interference immunity against conducted variable distu	rbance induced by high-frequency fields	
 Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 	Yes	
Emission of radio interference acc. to EN 55 011		
 Limit class A, for use in industrial areas 	Yes; Group 1	
• Limit class B, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011	
Degree and class of protection		
IP degree of protection	IP20	
Standards, approvals, certificates		
CE mark	Yes	
UL approval	Yes	
cULus	Yes	
FM approval	Yes	
RCM (formerly C-TICK)	Yes	
KC approval	Yes	
Marine approval	Yes	
Ambient conditions		
Free fall		
• Fall height, max.	0.3 m; five times, in product package	
Ambient temperature during operation		
• min.	-20 °C	
• max.	60 °C; Number of simultaneously activated inputs or outputs 7 or 5 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 14 or 10 at 55 °C horizontal or 45 °C vertical	
 horizontal installation, min. 	-20 °C	
 horizontal installation, max. 	60 °C	
• vertical installation, min.	-20 °C	
• vertical installation, max.	50 °C	
Ambient temperature during storage/transportation		
• min.	-40 °C	
• max.	70 °C	
Air pressure acc. to IEC 60068-2-13		
• Operation, min.	795 hPa	
• Operation, max.	1 080 hPa	
- p - · · · · · · · · · ·		
 Storage/transport, min. 	660 hPa	
	660 hPa 1 080 hPa	
• Storage/transport, min.		

• In stall stars altitude an an	2 000 m
Installation altitude, max.	2 000 m
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	
Programming	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Know-how protection	
 User program protection/password protection 	Yes
Copy protection	Yes
 Block protection 	Yes
Access protection	
 Protection level: Write protection 	Yes
 Protection level: Read/write protection 	Yes
 Protection level: Complete protection 	Yes
Cycle time monitoring	
• adjustable	Yes
Dimensions	
Width	130 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	585 g
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