## **SIEMENS**

## **Data sheet**

6ES7215-1BG40-0XB0





SIMATIC S7-1200, CPU 1215C, compact CPU, AC/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: AC 85-264 V AC at 47-63 Hz, program/data memory 200 KB



General information	
Product type designation	CPU 1215C AC/DC/relay
Firmware version	V4.6
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V18 or higher
Supply voltage	
Rated value (AC)	
• 120 V AC	Yes
• 230 V AC	Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	265 V
Line frequency	
<ul> <li>permissible range, lower limit</li> </ul>	47 Hz
permissible range, upper limit	63 Hz
Input current	
Current consumption (rated value)	100 mA at 120 V AC; 50 mA at 240 V AC
Current consumption, max.	300 mA at 120 V AC; 150 mA at 240 V AC
Inrush current, max.	20 A; at 264 V
l²t	0.8 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	20.4 to 28.8V
Power loss	
Power loss, typ.	14 W
Memory	
Work memory	
integrated	200 kbyte
Load memory	
• integrated	4 Mbyte
<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	with SIMATIC memory card
Backup	
• present	Yes
maintenance-free	Yes
without battery	Yes
CPU processing times	

for his according to the	0.00 var / instanction
for bit operations, typ.	0.08 μs; / instruction
for word operations, typ.	1.7 µs; / instruction
for floating point arithmetic, typ.  CPU-blocks	2.3 µs; / instruction
Number of blocks (total)	DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used
OB	
Number, max.	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	14 kbyte
Flag	
• Size, max.	8 kbyte; Size of bit memory address area
Local data	
• per priority class, max.	16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB
Address area	
Process image	
Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
Hardware configuration	
Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
Time of day	
Clock	
Hardware clock (real-time)	Yes
Backup time	480 h; Typical
Deviation per day, max.	±60 s/month at 25 °C
Digital inputs	200 Sittorial at 20 O
Number of digital inputs	14: Integrated
	14; Integrated
of which inputs usable for technological functions  Source/cipk input	6; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs  all mounting positions	
<u> </u>	14
— up to 40 °C, max.	14
Input voltage	24.\/
Rated value (DC)     for signal "0"	24 V
• for signal "1"	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	Voc. 0.2 mg 0.4 mg 0.8 mg 4.6 mg 2.2 mg 6.4 mg mg 4.6 mg mg 1.4 l l l
— 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	
<ul><li>with resistive load, max.</li></ul>	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 operating cycles, max.  Cable length  shielded, max.  unshielded, max.  Analog inputs  Number of analog inputs  Input ranges  Voltage  Input ranges (rated values), voltages  o to +10 V  Input resistance (0 to 10 V)  Cable length shielded, max.  Analog outputs	mechanically 10 million, at rated load voltage 100 000  500 m  150 m  2  Yes  Yes ≥100k ohms
shielded, max.     unshielded, max.  Analog inputs  Number of analog inputs  Input ranges     Voltage  Input ranges (rated values), voltages     0 to +10 V     — Input resistance (0 to 10 V)  Cable length     shielded, max.  Analog outputs	150 m  2  Yes  Yes
unshielded, max.  Analog inputs  Number of analog inputs  Input ranges  Voltage  Input ranges (rated values), voltages  0 to +10 V  Input resistance (0 to 10 V)  Cable length shielded, max.  Analog outputs	150 m  2  Yes  Yes
Analog inputs  Number of analog inputs  Input ranges  Voltage  Input ranges (rated values), voltages  0 to +10 V  Input resistance (0 to 10 V)  Cable length shielded, max.  Analog outputs	2 Yes Yes
Number of analog inputs Input ranges  Voltage Input ranges (rated values), voltages  o to +10 V  Input resistance (0 to 10 V)  Cable length shielded, max.  Analog outputs	Yes
Input ranges  Voltage Input ranges (rated values), voltages  0 to +10 V  Input resistance (0 to 10 V)  Cable length shielded, max.  Analog outputs	Yes
Voltage Input ranges (rated values), voltages  0 to +10 V  Input resistance (0 to 10 V)  Cable length shielded, max.  Analog outputs	Yes
Input ranges (rated values), voltages  • 0 to +10 V  — Input resistance (0 to 10 V)  Cable length • shielded, max.  Analog outputs	Yes
0 to +10 V     — Input resistance (0 to 10 V)  Cable length     shielded, max.  Analog outputs	
— Input resistance (0 to 10 V)  Cable length  ● shielded, max.  Analog outputs	
Cable length  ● shielded, max.  Analog outputs	≥100k ohms
shielded, max.  Analog outputs	
Analog outputs	400
	100 m; twisted and shielded
Number of analog outputs	2
Output ranges, current	· ·
• 0 to 20 mA	Yes
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	40.17
Resolution with overrange (bit including sign), max.	10 bit
Integration time, parameterizable	Yes
Conversion time (per channel)	625 µs
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Interface types	
• RJ 45 (Ethernet)	Yes
<ul> <li>Number of ports</li> </ul>	2
integrated switch	Yes
Protocols	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
SIMATIC communication	Yes
Open IE communication	Yes; Optionally also encrypted
Web server	Yes
Media redundancy	Yes
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode	No 
— IRT	No
— PROFlenergy	No
— Prioritized startup	Yes
Number of IO devices with prioritized startup, max.	16
Number of connectable IO Devices, max.	16
Number of connectable IO Devices for RT, max.	16
— of which in line, max.	16
Activation/deactivation of IO Devices	Yes
<ul> <li>Number of IO Devices that can be simultaneously activated/deactivated, max.</li> </ul>	8
— 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; encryption with TLS V1.3 pre-selected
— Isochronous mode	No
— IRT	No
— PROFlenergy	Yes
— Shared device	Yes
<ul> <li>Number of IO Controllers with shared device, max.</li> </ul>	2
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIsafe	No
PROFIBUS	Yes; CM 1243-5 (master) or CM 1242-5 (slave) required
OPC UA	Yes; OPC UA Server
AS-Interface	Yes; CM 1243-2 required
Protocols (Ethernet)	
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Redundancy mode	
Media redundancy	
— MRP	Yes; as MRP redundancy manager and/or MRP client
Open IE communication	105, as with recumulating manager and/or with fullent
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	
<ul><li>supported</li></ul>	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
<ul> <li>User authentication</li> </ul>	"anonymous" or by user name & password
<ul> <li>Number of sessions, max.</li> </ul>	10
<ul> <li>Number of subscriptions per session, max.</li> </ul>	5
<ul><li>— Sampling interval, min.</li></ul>	100 ms
<ul><li>— Publishing interval, min.</li></ul>	200 ms
<ul> <li>Number of server methods, max.</li> </ul>	20
<ul> <li>Number of monitored items, recommended max.</li> </ul>	1 000
Number of server interfaces, max.	2
<ul> <li>Number of nodes for user-defined server interfaces,</li> </ul>	2 000
max.	
Further protocols	
MODBUS	Yes
communication functions / header	
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes
User data per job, max.	See online help (S7 communication, user data size)
Number of connections	555 Stanto noily (57 Sommanication, addit data size)
	PG Connections: A received / 4 may: UMI Connections: 42 received / 42 may:
• 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	

Statution of the country of the coun	a Status/control variable	Von
Security   Process   Pro	Status/control variable     Variables	Yes
Potential separation digital ringuis   Protecting   Yes		inputs/outputs, memory bits, DBS, distributed I/OS, timers, counters
Personant   Pers		Van
Number of configurable Traces   2		Tes
Number of configurable Traces   2	<u> </u>	Voc
• Number of configurate Traces         2           • Memory size per frace, max.         512 klytle           Interpretablishing positions struth sinformation           Diagnostics indication LED           • FUNDATO LED         Yes           • RUNSTOP LED         Yes           • RANT LED         Yes           • Namber of counters         6           • Namber of counters         7           • Counting frequency, max.         100 kHz           Frequency measurement         Yes           controlled positioning axes via pulse-direction interface         Up to 4 with Si8 1222           File controller         Yes           Number of positioning axes via pulse-direction interface         Up to 4 with Si8 1222           File controller         Yes           Number of positioning axes via pulse-direction interface         Up to 4 with Si8 1222           File controller         Yes           Number of positioning axes via pulse-direction interface         Up to 4 with Si8 1222           File controller         Yes           Number of position digital inputs         6 500 V AC for 1 minute           • Determine because the channels is quality of the channels, in groups of         1           Evolution and position of the channels, in groups of <t< td=""><td></td><td>Tes</td></t<>		Tes
Memory size per trace, max.   1912 ktyle		2
Disprosites indicator LED	-	
Diagnostics indication LED		312 kbyte
FUNDSTOP LED		
■ FREFOR LED         Yes           ■ MAINT LED         Yes           Integrated Functions           Counter           ■ Number of counters         6           ■ Counting frequency, max         100 MHz           Frequency measurement         Yes           Number of positioning are six pubs-direction interface         Up to 4 with SB 1222           Number of positioning axes by a pubs-direction interface         Yes           FID controller         Yes           Number of positioning axes by a pubs-direction interface         Yes           FID controller         Yes           Number of positioning axes by a pubs-direction interface         Yes           FID controller         Yes           Number of positioning axes by a pubs-direction interface         Yes           FID controller         Yes           Number of positioning axes by a pubs-direction interface         Yes           FID controller         Yes           Number of positioning axes by a pubs-direction interface         Yes           Following a separation digital pubs         500 V AC for 1 minute           • Potential separation digital pubs         Felays           • Potential separation digital outputs         Relays           • Potential separation digital output		Vac
MAINT LED   West		
Counter		
Counter  • Number of counters • Counting frequency, max. 100 kHz Frequency measurement Ves controlled positioning Number of position-controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction interface Up to 4 with SB 1222 PID Controller Ves Number of alarm inputs 4 Potential separation digital inputs • Potential separation digital outputs • Potential separation outputs • Potential separat		163
Number of counters  Frequency measurement Frequency masurement Frequency fields Frequ		
Frequency measurement Yes Controlled positioning A Yes Controlled positioning A Yes Number of position-controlled positioning axes, max.   Number of position-controlled positioning axes via pulse-direction interface   PID controller   Yes Number of alarm inputs   Potential separation digital inputs   • Potential separation digital inputs   • Potential separation digital inputs   • Potential separation digital outputs   • Potential separation d		6
Frequency measurement 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 Potential separation digital inputs 500 V AC for 1 minute 1 • between the channels, in groups of 1 Potential separation digital outputs 8 • between the channels, in groups of 2 • between the channels, in groups of 2 • between the channels, in groups of 2 • between the channels, in groups of 3 • between the channels in groups of 2 • between the channels in groups of 3 • between the channels in groups of 3 • between the channels in groups of 3 • between the channels in groups of 4 • between the channels in groups of 4 • between the channels in groups of 5 • between the channels in groups of 6 • between the channels in groups of 6 • between the channels in groups of 7 • Test voltage at air discharge of static electricity • Interference immunity against discharge of static electricity • Interference immunity on signals discharge of static electricity • Interference immunity on signals discharge of static electricity • Interference immunity on supply lines acc. to IEC 61000-4 • Interference immunity on supply lines acc. to IEC 61000-4 • Interference immunity on supply lines acc. to IEC 61000-4 • Interference immunity against voltage surge • Interference		
controlled positioning mass, max.  Number of positioning axes via pulse-direction interface  PID controller  Number of positioning axes via pulse-direction interface  PID controller  Number of alarm inputs  Potential separation  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital inputs  Potential separation digital outputs  Potential separation digital outpu		
Number of position-controlled positioning axes, max.  Number of positioning axes value-direction interface  Pic controller  Number of alarm inputs  Potential separation digital outputs  Pote	<u> </u>	
Number of positioning axes via pulse-direction interface PID controller Number of alarm inputs Potential separation (ligital outputs Potential separation (ligital inputs Potential separation (ligital cursus) Potential separation (ligital inputs Potential separation (ligital inputs Potential separation (ligital inputs Potential		
PID controller Number of alarm inputs Potential separation  Potential separation digital inputs Potential separation digital outputs Potential separation digital o	·	
Number of alarm inputs Potential separation Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Detential separation digital inputs Detential separation digital inputs Potential separation digital outputs Potential separation digital separation digital separation digital outputs Potential separation digital separation digital separation digital separation digi		
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Potential separation digital inputs  Potential separation digital inputs between the channels, in groups of 1  Potential separation digital outputs Potential separation digital outputs Potential separation digital outputs between the channels between the channels between the channels between the channels, in groups of 2  ENC  ENC  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 contact discharge  6 kV  Interference immunity to cable-borne interference Interference immunity to cable-borne interference Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity against voltage surge  Interference immunity against voltage surge  Interference immunity against voltage surge  Interference immunity against voltage surge  Ves  Interference immunity against voltage surge  Interference immunity against voltage surge  Ves  Interference immunity against high-frequency radiation acc. to IEC 61000-4-5  Interference immunity against high-frequency radiation acc. to IEC 61000-4-5  Emission of radio interference acc. to EN 55 011  P degree of protection  IP degr		•
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  ENC  ENC  Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity acc. to IEC 610004-2 — Test voltage at air discharge — Test voltage at air discharge — Interference immunity on supply lines acc. to IEC 61000- 4-4 Interference immunity to n 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 on supply lines acc. to IEC 61000- 4-5 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 voltage surge Interference immunity against voltage surge Interference immunity against injth-frequency radiation acc. to IEC 61000- 4-5 Interference immunity against stonducted variable disturbance induced by high-frequency fields  Interference immunity against injth-frequency radiation acc. to IEC 61000- 4-5 Interference immunity against high-frequency radiation acc. to IEC 61000- 4-5 Interference immunity against high-frequency radiation acc. to IEC 61000- 4-5 Interference immunity against high-frequency radiation acc. to IEC 61000- 4-5 Interference immunity against high-frequency radiation acc. to IEC 61000- 4-5 Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity on supply lines acc. to IEC		
between the channels, in groups of Potential separation digital outputs     Potential separation digital outputs     between the channels		500 V AC for 1 minute
Potential separation digital outputs  Potential separation digital outputs be tween the channels between the channels, in groups of 2  EMC  Interference immunity against discharge of static electricity Interference immunity against discharge Test voltage at air discharge Test voltage at ontact discharge Test voltage at air discharge Test voltage at air discharge Test voltage at air discharge of static electricity Test voltage at air discharge of test voltage		
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 ac. to IEC 61000-4.2 — Test voltage at air discharge — Test voltage at air discharge — Test voltage at ontact 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 supply lines acc. to IEC 61000-4.5  Interference immunity against voltage surge — Interference immunity against voltage surge — Interference immunity against substance induced by high-frequency fields  Interference immunity against substance induced by high-frequency fields — Interference immunity against high-frequency radiation acc. to IEC 61000-4-5  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 — Limit class B, for use in residential areas — Ves; Group 1 — 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 20  Standards, approvals, certificates  CE mark — Yes  CE mark — Yes  Yes  CE mark — Yes  FM approval — Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes		
between the channels in groups of 2  EMC  Interference immunity against discharge of static electricity  Interference immunity against discharge of static electricity  Interference immunity against discharge of static electricity acct. to IEC 61000-4-2  — Test voltage at air discharge	· · · · · · · · · · · · · · · · · · ·	Relays
Interference immunity against discharge of static electricity  Interference immunity against discharge of static electricity  Interference immunity against discharge of static electricity ac. to IEC 61000-42  — Test voltage at air discharge		
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  Interference immunity on supply lines acc. to IEC 61000-4-4  Interference immunity on supply lines acc. to IEC 61000-4-4  Interference immunity against voltage surge  Interference immunity against voltage surge  Interference immunity against voltage surge  Interference immunity against high-frequency radiation acc. to IEC 61000-4-5  Interference immunity against high-frequency radiation acc. to IEC 61000-4-6  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 Yes; Group 1  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  FM approval Yes  FM approval Yes  FM approval Yes  FM approval Yes  FR M approval Yes  FR M approval Yes	<ul> <li>between the channels, in groups of</li> </ul>	2
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  Interference immunity on supply lines acc. to IEC 61000-4-4  Interference immunity against voltage surge  Interference immunity against voltage surge  Interference immunity on supply lines acc. to IEC 61000-4-5  Interference immunity against voltage surge  Interference immunity against voltage surge  Interference immunity against conducted variable disturbance induced by high-frequency fields  Interference immunity against high-frequency radiation acc. to IEC 61000-4-6  Interference immunity against industrial areas  Interference immunity against voltage surge  Interference immunity against sonducted variable disturbance induced by high-frequency fields  Yes  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  Yes; Group 1  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  IP degree of protection  IP 20  Standards, approvals, certificates  CE mark  Yes  UL approval  Yes  CULus  Yes  FM approval  Yes  FM approval  Yes	EMC	
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  • 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 voltage surge  • Interference immunity against conducted variable disturbance induced by high-frequency fields  • 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 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 IP20  Standards, approvals, certificates  CE mark Yes  UL approval Yes  FM approval Yes  RCM (formerly C-TICK) Yes	Interference immunity against discharge of static electricity	
Test voltage at air discharge 6 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 IEC 61000-4-4  Interference immunity against voltage surge  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 voltage surge  Interference immunity against conducted variable disturbance induced by high-frequency fields  Interference immunity against high-frequency radiation acc. to IEC 61000-4-6  Emission of radio interference acc. to EN 55 011  Interference immunity against acc. to IEC 61001-4-6  Emission of radio interference acc. to EN 55 011  Interference immunity against industrial areas Yes; Group 1  Yes; Group 1  Yes; Group 1  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  IP degree of protection  IP 20  Standards, approvals, certificates  CE mark Yes  UL approval  Yes  CLULus Yes  FM approval Yes  RCM (formerly C-TICK)  Yes	Interference immunity against discharge of static	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 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 disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against nigh-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011  Interference immunity against conducted variable disturbance induced by high-frequency fields 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 Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011  Pegree and class of protection IP degree of protecti	electricity acc. to IEC 61000-4-2	
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 voltage surge  Interference immunity against conducted variable disturbance induced by high-frequency fields  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  Yes; Group 1  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  IP degree of protection  IP degree of protection  Ves  Yes  Yes  CE mark  Yes  Yes  CHusproval  Yes  Yes  CHusproval  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	<ul> <li>Test voltage at air discharge</li> </ul>	8 kV
Interference immunity on signal cables acc. to IEC 61000- 4-4 Interference immunity against voltage surge Interference immunity against conducted variable disturbance induced by high-frequency fields 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 Limit class B, for use in residential areas Find agree of protection  IP20  Standards, approvals, certificates  CE mark UL approval CULus FM approval RCM (formerly C-TICK)  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	Test voltage at contact discharge	6 kV
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 disturbance induced by high-frequency fields  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 Limit class B, for use in residential areas Pegree and class of protection  IP degree of protection IP degree of protection IP20  Standards, approvals, certificates  CE mark Yes UL approval CULus Yes FM approval RCM (formerly C-TICK)  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	•	
Interference immunity against voltage surge  Interference immunity against conducted variable disturbance induced by high-frequency fields  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 Limit class B, for use in residential areas Pegree and class of protection  IP degree of protection  IP20  Standards, approvals, certificates  CE mark Ves UL approval Ves UL approval Ves FM approval RCM (formerly C-TICK)  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye		Yes
Interference immunity against voltage surge  Interference immunity on supply lines acc. to IEC 61000-4-5  Interference immunity against conducted variable disturbance induced by high-frequency fields  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  Yes; Group 1  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  CE mark  Yes  UL approval  Yes  FM approval  Yes  FM approval  Yes  RCM (formerly C-TICK)		Yes
Interference immunity on supply lines acc. to IEC 61000- 4-5  Interference immunity against conducted variable disturbance induced by high-frequency fields  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 Limit class B, for use in residential areas Pegree and class of protection  IP degree of protection IP degree of protection IP20  Standards, approvals, certificates  CE mark Yes UL approval Yes  CUlus Yes  FM approval RCM (formerly C-TICK) Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes		1.00
Interference immunity against conducted variable disturbance induced by high-frequency fields  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 For Class B according to EN 55011  Pegree and class of protection IP degree of protection IP degree of protection IP 20  Standards, approvals, certificates  CE mark Yes UL approval Yes CULus Yes FM approval Yes RCM (formerly C-TICK) Yes	Interference immunity against voltage surge	
Interference immunity against conducted variable disturbance induced by high-frequency fields  • 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 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 IP20  Standards, approvals, certificates  CE mark Yes  UL approval Yes  CULus Yes  FM approval Yes  RCM (formerly C-TICK) Yes		Yes
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  Limit class B, for use in residential areas  Pes; 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  Ves  UL approval  Yes  CULus  FM approval  RCM (formerly C-TICK)  Yes		
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  • Limit class B, for use in residential areas  Yes; Group 1  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  FM approval  Yes  RCM (formerly C-TICK)  Yes	, ,	
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  • Limit class B, for use in residential areas  Yes; Group 1  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		Yes
<ul> <li>Limit class A, for use in industrial areas</li> <li>Limit class B, for use in residential areas</li> <li>Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011</li> <li>Degree and class of protection</li> <li>IP degree of protection</li> <li>Standards, approvals, certificates</li> <li>CE mark</li> <li>Yes</li> <li>UL approval</li> <li>Yes</li> <li>cULus</li> <li>FM approval</li> <li>RCM (formerly C-TICK)</li> <li>Yes</li> </ul>		
◆ 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  FM approval  FM approval  RCM (formerly C-TICK)  Yes		Yes: Group 1
for Class B according to EN 55011  Degree and class of protection  IP degree of protection  Standards, approvals, certificates  CE mark  UL approval  CULus  FM approval  RCM (formerly C-TICK)  For Class B according to EN 55011  IP20  IP20  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye		
IP degree of protection  Standards, approvals, certificates  CE mark  UL approval  cULus  FM approval  RCM (formerly C-TICK)  IP20  IP20  Yes  Yes  Yes  Yes  Yes  Yes  Yes		
Standards, approvals, certificates  CE mark  UL approval  cULus  FM approval  RCM (formerly C-TICK)  Yes  Yes  Yes  Yes	Degree and class of protection	
CE mark         Yes           UL approval         Yes           cULus         Yes           FM approval         Yes           RCM (formerly C-TICK)         Yes	IP degree of protection	IP20
UL approval CULus Yes FM approval PCM (formerly C-TICK) Yes  Yes	Standards, approvals, certificates	
CULus Yes FM approval Yes RCM (formerly C-TICK) Yes	CE mark	Yes
FM approval Yes RCM (formerly C-TICK) Yes	UL approval	Yes
RCM (formerly C-TICK) Yes	cULus	Yes
	FM approval	Yes
KC approval	RCM (formerly C-TICK)	Yes
	KC approval	Yes

Marine approval	Yes
Ecological footprint	
environmental product declaration	Yes
Global warming potential	100
— global warming potential, (total) [CO2 eq]	106 kg
— global warming potential, (total) [002 eq]  — global warming potential, (during production) [CO2	18.5 kg
eq]	10.5 Ng
<ul> <li>global warming potential, (during operation) [CO2</li> </ul>	88.2 kg
eq]	
— global warming potential, (after end of life cycle)	-1.12 kg
[CO2 eq]	
Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-20 °C
• max.	60 °C; Number of simultaneously activated inputs or outputs 7 or 5 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 14 or 10 at 55 °C horizontal or 45
	°C vertical
• horizontal installation, min.	-20 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-20 °C
• vertical installation, max.	50 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
Operation, min.	795 hPa
Operation, max.	1 080 hPa
Storage/transport, min.	660 hPa
Storage/transport, max.	1 080 hPa
Altitude during operation relating to sea level	1 330 iii u
Installation altitude, min.	-1 000 m
Installation altitude, max.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Relative humidity	o ooo m, restrictions for installation dilitades? 2 ooo m, see mandal
Operation, max.	95 %; no condensation
Vibrations	30 /0, 110 CONDUNATION
Vibration resistance during operation acc. to IEC 60068-	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
2-6	2 g (11/3 ) wall mounting, 1 g (11/3 ) bit 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	
User program protection/password protection	Yes
Copy protection	Yes
Block protection	Yes
Access protection	
protection of confidential configuration data	Yes
Protection level: Write protection	Yes
Protection level: Read/write protection	Yes
Protection level: Complete protection	Yes
programming / cycle time monitoring / header	
adjustable	Yes
Dimensions	
- Interioris	

Width	130 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	550 g

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