## **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 125 KB

General information	
Product type designation	CPU 1215C AC/DC/relay
Firmware version	V4.5
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V17 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
<ul> <li>permissible range, upper limit</li> </ul>	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	125 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
<ul> <li>maintenance-free</li> </ul>	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, two	2.3 us. / 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
ОВ	
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	
<ul> <li>Inputs, adjustable</li> </ul>	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	
<ul> <li>Hardware clock (real-time)</li> </ul>	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	44
— 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	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	Von
— parameterizable	Yes
for technological functions  — parameterizable	Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3
— parametenzable	@ 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	40
Number of relay outputs	10
Number of operating cycles, max.  Cable length	mechanically 10 million, at rated load voltage 100 000
Cable length	500 m
• shielded, max.	500 m

• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	2
• 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	2
Output ranges, current	
• 0 to 20 mA	Yes
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	10 bit
Integration time, parameterizable	Yes
Conversion time (per channel)	625 µs
Encoder	
Connectable encoders	
2-wire sensor	Yes
	100
1. Interface	PROFINET
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes Yes
Autoropoing	Yes
Autocrossing Interface types	res
RJ 45 (Ethernet)	Yes
Number of ports	2
integrated switch	Yes
Protocols	165
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
<ul> <li>Number of IO devices with prioritized startup,</li> </ul>	16
max.	
<ul> <li>Number of connectable IO Devices, max.</li> </ul>	16
Number of connectable IO Devices for RT,	16
max.	16
<ul><li>— of which in line, max.</li><li>— Activation/deactivation of IO Devices</li></ul>	16 Yes
— Number of IO Devices that can be simultaneously activated/deactivated, max.	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

DDOCIonoray	Voc
— PROFlenergy     — Shared device	Yes Yes
Number of IO Controllers with shared device.	2
max.	-
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  Redundancy mode	Yes
Redundancy mode  Media redundancy	
— MRP	Yes; as MRP redundancy manager and/or MRP client
Open IE communication	100, do mitt Todundanoj managor anazor mitt dilent
• 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
<ul> <li>Application authentication</li> </ul>	required Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
<ul> <li>User authentication</li> </ul>	"anonymous" or by user name & password
Number of sessions, max.	10
<ul> <li>Number of subscriptions per session, max.</li> </ul>	5
— Sampling interval, min.	100 ms
— Publishing interval, min.	200 ms
<ul> <li>Number of server methods, max.</li> </ul>	20
<ul> <li>Number of monitored items, recommended</li> </ul>	1 000
max.	
Number of server interfaces, max.	2
<ul> <li>Number of nodes for user-defined server interfaces, max.</li> </ul>	2 000
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	
overall	PG Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / 18 max; S7 Connections: 8 reserved / 14 max; Open User Connections: 8 reserved / 14 max; Web Connections: 2 reserved / 30 max; OPC UA Connections: 0 reserved / 10 max; Total Connections: 34 reserved / 64 max
Test commissioning functions	
Status/control	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
-	

# Forming Wes  # present Fraces  # Number of configurable Traces  # Number of position controlled positioning axes, max  # Number of positioning axes via pulse-direction interface # PID controller # Number of positioning axes via pulse-direction interface # PID controller # Number of positioning axes via pulse-direction interface # PID controller # Number of positioning axes via pulse-direction interface # PID controller # Number of positioning axes via pulse-direction interface # PID controller # Number of positioning axes via pulse-direction interface # PID controller # Number of positioning axes via pulse-direction interface # PID controller # Number of positioning axes via pulse-direction interface # PID controller # Number of positioning axes via pulse-direction interface # PID controller # Number of positioning axes via pulse-direction interface # PID controller # Potential separation digital imputs # Potential separation digital outputs # Potential separati		
Number of configurable Traces   2	• Forcing	Yes
* Number of configurable Traces 2 * Number of configurable Traces 2 * Number of configurable Traces 3 * Number of configurable Traces 4 * Number of configurable Traces 4 * Number of configurable Traces 4 * Number of positioning axes years 4 *	•	
Mumber of configurable Traces   512 kbyte	·	Yes
Memory size pet runce, max.  Diagnostics indication LED  • RUNSTOP LED  • RUNSTOP LED  • RANT LED  • NAINT LED  • National Frequency measurement  Controlled positioning axes, max.  Number of position controlled positioning axes, max.  Number of positioning axes via pulse-direction interface  PID controller  • Potential separation of glidal inputs  • Potential separation ofligital inputs  • Potential separation digital outputs  • Detween the channels, in groups of  • Detween the channels in groups of  • Sky  Interference immunity against discharge of static electricity  • Interference immunity against discharge  • Interference immunity in supply lines acc. to IEC  610004-4  • Interference immunity on supply lines acc. to IEC  610004-5  • Interference immunity on supply lines acc. to IEC		0
Interfuence immunity against discharge of static electricity	_	
Polymorphysics indication LED		512 kbyte
■ RENOR LED ■ RENOR LED ■ Yes ■ MAINT LED ■ Yes  Integrized Functions  Frequency measurement controlled positioning axes, max. Number of position controlled positioning axes, max. Number of position controlled positioning axes, max. Number of position controlled positioning axes, max. Number of positioning axes via pulse-direction interface PID controller Number of alarm inputs ■ Potential separation ■ Potential separation ■ Potential separation digital inputs ■ Potential separation digital inputs ■ Potential separation digital outputs ■ Potential separatio		
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Frequency measurement controlled positioning axes, max. Number of position-controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction interface PID controller Yes PID controller Yes Number of alarm inputs 4 Potential separation digital inputs Potential separation digital inputs Potential separation digital diputs Potential separation digital dip		
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Number of position-no trolled positioning axes, max. Number of positioning axes via pulse-direction interface PID controller Number of aliarm injuds  Potential separation Potential separation Potential separation digital injuts  Potential separation digital injuts  Potential separation digital injuts  Potential separation digital injuts  Potential separation digital outputs  Potential separation digital outpu		
Number of positioning axes via pulse-direction interface PID controller Number of alarm injusts 4  Potential separation Potential separation digital injusts • Potential separation digital outputs • Relays		
Pilo controller Number of alarm inputs  Potential separation digital inputs  • Potential separation digital inputs  • Potential separation digital inputs  • Potential separation digital outputs  • Interference immunity against discharge of static electricity  • Interference immunity against discharge of static electricity  • Interference immunity on supply lines acc. to IEC  • Interference immunity on supply lines acc. to IEC  • Interference immunity against voltage surge  • Interference immunity against voltage surge  • Interference immunity against lopin-frequency radiation acc. to IEC 61000-4-6  Interference immunity against high-frequency radiation acc. to IEC 61000-4-6  Potential separation dischargence acc. to EN 55 011  • Linit class A, for use in residential areas  • Linit class B, for use in residential areas  • Linit class B, for use in residential areas  • Linit class B, for use in residential areas  • Linit class B, for use in residential areas  • Linit class B, for use in residential areas  • Linit class B, for use in residential areas  • Linit class B, for use in residential areas  • Linit class B, for use in residential areas  • Linit class B, for use in residential areas		
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e 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 • linterference immunity against discharge of static electricity • Interference immunity against discharge • Interference immunity on supply lines acc. to IEC • for 1000-44 • Interference immunity on supply lines acc. to IEC • for 1000-44 • Interference immunity against voltage surge • Interference immunity against voltage surge • Interference immunity against stigh-frequency • Yes • Group 1 • Yes; Group 1 • Yes; When appropriate measures are used to ensure compliance with the interference immunity against stight against s		
Potential separation digital outputs     Potential separation digital dig		FOON A O for A principle
Potential separation digital outputs  Potential separation digital outputs between the channels between the channe		
Potential separation digital outputs between the channels 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 acc. to IEC 61000-4-2 — Test voltage at air discharge — Test voltage at contact 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 and supply lines 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 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  Limit class A, for use in industrial areas Limit class A, for use in residential areas Limit class A, for use in residential areas Limit class A, for use in residential areas 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 IP20  Standards, approvals, certificates  CE mark UL approval Yes CM (formerly C-TICK) Yes CM (promety C-TICK) Yes Marine approval Ambient conditions  Free fall Fall height, max. Ambient temperature during operation  o min.  - 20 °C		1
between the channels 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 of 1000-4-2      — Test voltage at air discharge	·	Polovo
between the channels, in groups of BMC  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 8 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 ligh-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  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  Ves  UL approval  Ves  CM (formerly C-TICK)  Yes  KG approval  Yes  Marine approval  Yes  Marine approval  Yes  Marine approval  Free fall  Fall height, max.  Anbient conditions  Free fall  Fall height, max.  Anbient temperature during operation  • min.  -20 °C		
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		ž
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 to 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 tonducted variable disturbance 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 B, for use in industrial areas • Limit class B, for use in industrial areas • Limit class B, for use in residential areas  Pegree and class of protection  IP degree of protection  IP degree of protection  IP 20  Standards, approvals, certificates  CE mark UL approval Yes  UL approval Yes  MCA (formerly C-TICK) Yes  MCA (grownerly C-TICK) Yes  MCA (grownerly C-TICK) Yes  Marine approval  Arbient conditions  Free fall • Fall height, max. Anbient conditions		
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 voltage surge • Interference immunity against conducted variable disturbance • Interference immunity against tonducted variable disturbance • 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  • Limit class B, for use in residential areas • Limit class B, for use in residential areas  • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in interference acc. to EN 55 011 • Limit class B, for use in interference acc. to EN 55 011 • Emission of radio interference acc. to EN 55 011 • Fres and the frequency fields  * Yes  * Yes  * Group 1  • Yes  * Ye		V
Test voltage at air discharge Test voltage at contact discharge Test voltage at contact discharge Test voltage at contact discharge 6 kV 6 k	Interference immunity against discharge of static electricity acc. to IEC 61000-4-2	Yes
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 conducted variable disturbance 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  Pes; 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  IP20  Standards, approvals, certificates  CE mark  UL approval  CULus  Yes  CE mark  Yes  UL approval  Yes  RCM (formerly C-TICK)  Yes  RCM (formerly C-TICK)  Yes  RCM approval  Yes  Ambient conditions  Free fall  Fiel height, max.  O.3 m; five times, in product package  Ambient temperature during operation  • min.  -20 °C		8 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 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  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  FM approval  Yes  FM approval  Yes  FM approval  Yes  RCM (formerty C-TICK)  Yes  RCM (formerty C-TICK)  Yes  Ambient conditions  Free fall  Fall height, max.  O.3 m; five times, in product package  Ambient temperature during operation  • min.  -20 °C		
<ul> <li>Interference immunity on supply lines acc. to IEC 61000-4-4</li> <li>Interference immunity on signal cables acc. to IEC 61000-4-4</li> <li>Interference immunity against voltage surge</li> <li>Interference immunity on supply lines acc. to IEC 61000-4-5</li> <li>Interference immunity against conducted variable disturbance induced by high-frequency fields</li> <li>Interference immunity against conducted variable disturbance induced by high-frequency fields</li> <li>Interference immunity against high-frequency radiation acc. to IEC 61000-4-6</li> <li>Emission of radio interference acc. to EN 55 011</li> <li>I Limit class A, for use in industrial areas</li> <li>I Limit class B, for use in residential areas</li> <li>I 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 20</li> <li>Standards, approvals, certificates</li> <li>CE mark</li> <li>UL approval</li> <li>Yes</li> <li>ULUs</li> <li>Yes</li> <li>CULus</li> <li>Yes</li> <li>RCM (formerly C-TICK)</li> <li>Yes</li> <li>Yes</li> <li>Amproval</li> <li>Yes</li> <li>Yes</li> <li>Amproval</li> <li>Yes</li> <li>Ambient conditions</li> <li>Free fall</li> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>-20 °C</li> </ul>		
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 voltage surge  Interference immunity against conducted variable disturbance induced by high-frequency fields  Interference immunity against stigh-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  Immit class B, for use in residential areas  Immit class B, for use i	·	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 • Limit class B, for use in residential areas  Pegree and class of protection  IP degree of protection  IP20  Standards, approvals, certificates  CE mark UL approval CULus Yes  FM approval PM appr		
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 conducted variable disturbance induced by high-frequency fields  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 conducted variable disturbance induced by high-frequency fields  Yes Group 1  Limit class A, for use in industrial areas  Limit class B, 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 20  Standards, approvals, certificates  CE mark  Ves  UL approval  Yes  CL us  Yes  FM approval  Yes  FM approval  Yes  RCM (formerly C-TICK)  Yes  Marine approval  Yes  Ambient conditions  Free fall  Free fall  Fall height, max.  Anbient temperature during operation  Final height, max.  Anbient temperature during operation  Final height, max.  Anbient temperature during operation  Final height, max.  Anbient temperature during operation	, ,	Yes
<ul> <li>Interference immunity on supply lines acc. to IEC 61000-4-5</li> <li>Interference immunity against conducted variable disturbance induced by high-frequency fields</li> <li>Interference immunity against high-frequency radiation acc. to IEC 61000-4-6</li> <li>Emission of radio interference acc. to EN 55 011</li> <li>Limit class A, for use in industrial areas Yes; Group 1</li> <li>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</li> <li>Degree and class of protection</li> <li>IP20</li> <li>Standards, approvals, certificates</li> <li>CE mark Yes</li> <li>UL approval Yes</li> <li>GULus Yes</li> <li>FM approval Yes</li> <li>RCM (formerly C-TICK)</li> <li>KC approval Yes</li> <li>Marine approval Yes</li> <li>Ambient conditions</li> <li>Free fall</li> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>-20 °C</li> </ul>		
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 FM approval Yes FM approval RCM (formerly C-TICK) Yes Marine approval Yes Marine approval Ambient conditions  Free fall Fine Induced by high-frequency fields Yes FM ell height, max. O.3 m; five times, in product package  Ambient temperature during operation min20 °C		V
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 FM approval Yes FM approval Yes FM approval Yes McG (formerly C-TICK) Yes McT approval Yes Marine approval Yes Marine approval Yes Ambient conditions  Free fall  Free fall Fell height, max. 0.3 m; five times, in product package  Ambient temperature during operation Fmin20 °C		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     Ves; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011    Pegree and class of protection		e induced by high-frequency fields
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  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  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  Marine approval  Ambient conditions  Free fall  • Fall height, max.  Ambient temperature during operation  • min.  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Pes; When a		
■ Limit class A, for use in industrial areas     ■ Limit class B, for use in residential areas     ■ Limit class B, for use in residential areas     ■ 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  UL approval  CULus  FM approval  RCM (formerly C-TICK)  KC approval  Marine approval  Yes  Ambient conditions  Free fall  Fall height, max.  O.3 m; five times, in product package  Ambient temperature during operation  • min.  -20 °C		
■ 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  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  Marine approval  Ambient conditions  Free fall  Fall height, max.  O.3 m; five times, in product package  Ambient temperature during operation  • min.  Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011  Peace Standards, approvals Yes  Yes  Ves  Yes  Ansient conditions  Free fall  • Fall height, max.  O.3 m; five times, in product package	Emission of radio interference acc. to EN 55 011	
the limits 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  FM approval  RCM (formerly C-TICK)  KC approval  Marine approval  Arbient conditions  Free fall  Fall height, max.  Ambient temperature during operation  min.  tell height saccording to EN 55011  IP 20  Yes  Yes  Yes  Yes  Yes  Yes  Arbient temperature during operation  -20 °C	Limit class A, for use in industrial areas	Yes; Group 1
Degree and class of protection  IP degree of protection  Standards, approvals, certificates  CE mark  UL approval  cULus  FM approval  RCM (formerly C-TICK)  KC approval  Marine approval  Ambient conditions  Free fall  Fall height, max.  O.3 m; five times, in product package  Ambient temperature during operation  min.  Find the standards of protection  IP20  Yes  OULus  Yes  Fes  Free fall  Output	<ul> <li>Limit class B, for use in residential areas</li> </ul>	
IP degree of protection  Standards, approvals, certificates  CE mark UL approval cULus FM approval RCM (formerly C-TICK) KC approval Marine approval Marine approval  Free fall Fall height, max.  Ambient temperature during operation  min.  IP20  Yes  Yes  Yes  Yes  Yes  Yes  Yes  O.3 m; five times, in product package		the limits for Class B according to EN 55011
Standards, approvals, certificates  CE mark UL approval CULus FM approval RCM (formerly C-TICK) KC approval Marine approval Yes  Ambient conditions  Free fall Free fall Fall height, max.  O.3 m; five times, in product package  Ambient temperature during operation Final min.  -20 °C		
CE mark UL approval CULus Yes CULus Yes FM approval RCM (formerly C-TICK) KC approval Marine approval Yes Marine approval Yes Ambient conditions  Free fall Free fall Fall height, max. O.3 m; five times, in product package  Ambient temperature during operation Final Fina	IP degree of protection	IP20
UL approval cULus Yes FM approval RCM (formerly C-TICK) Yes KC approval Marine approval Yes  Ambient conditions  Free fall  Fall height, max.  O.3 m; five times, in product package  Ambient temperature during operation  min.  -20 °C	Standards, approvals, certificates	
CULus FM approval FM approval RCM (formerly C-TICK) KC approval Marine approval Yes Marine approval Yes  Ambient conditions  Free fall Fall height, max.  O.3 m; five times, in product package  Ambient temperature during operation Fine min.  -20 °C	CE mark	Yes
FM approval RCM (formerly C-TICK) Yes KC approval Yes Marine approval Yes  Ambient conditions  Free fall  Fall height, max.  O.3 m; five times, in product package  Ambient temperature during operation  min.  -20 °C	UL approval	Yes
RCM (formerly C-TICK) KC approval Yes Marine approval Yes  Ambient conditions  Free fall  • Fall height, max.  Ambient temperature during operation • min.  -20 °C	cULus	Yes
KC approval Marine approval Yes  Ambient conditions  Free fall  Fall height, max.  O.3 m; five times, in product package  Ambient temperature during operation  min.  -20 °C	FM approval	Yes
Marine approval  Ambient conditions  Free fall  Fall height, max.  O.3 m; five times, in product package  Ambient temperature during operation  min.  -20 °C		Yes
Free fall  Fall height, max.  O.3 m; five times, in product package  Ambient temperature during operation  min.  -20 °C		
Free fall  • Fall height, max.  0.3 m; five times, in product package  Ambient temperature during operation  • min.  -20 °C	Marine approval	Yes
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>0.3 m; five times, in product package</li> <li>-20 °C</li> </ul>	Ambient conditions	
Ambient temperature during operation  ● min.  -20 °C	Free fall	
• min20 °C	Fall height, max.	0.3 m; five times, in product package
	Ambient temperature during operation	
• max. 60 °C; Number of simultaneously activated inputs or outputs 7 or 5 (no	• min.	
	• 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
- havinantal installation	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	
<ul><li>Operation, min.</li></ul>	795 hPa
<ul> <li>Operation, max.</li> </ul>	1 080 hPa
<ul> <li>Storage/transport, min.</li> </ul>	660 hPa
Storage/transport, max.	1 080 hPa
Altitude during operation relating to sea level	
<ul> <li>Installation altitude, min.</li> </ul>	-1 000 m
<ul> <li>Installation altitude, max.</li> </ul>	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Relative humidity	
Operation, max.	95 %; no condensation
Vibrations	
<ul> <li>Vibration resistance during operation acc. to IEC 60068-2-6</li> </ul>	2 g (m/s²) wall mounting, 1 g (m/s²) 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	
	11 2
configuration / programming / header	
configuration / programming / header Programming language	
configuration / programming / header Programming language — LAD	Yes
configuration / programming / header Programming language — LAD — FBD	Yes Yes
configuration / programming / header Programming language — LAD — FBD — SCL	Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection	Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection  • User program protection/password protection	Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection  • User program protection/password protection • Copy protection	Yes Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection  • User program protection/password protection • Copy protection • Block protection	Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection  • User program protection/password protection • Copy protection • Block protection Access protection	Yes Yes Yes Yes Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection  • User program protection/password protection • Copy protection • Block protection  Access protection  • protection of confidential configuration data	Yes Yes Yes Yes Yes Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection  • User program protection/password protection • Copy protection • Block protection Access protection • protection of confidential configuration data • Protection level: Write protection	Yes Yes Yes Yes Yes Yes Yes Yes Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection  • User program protection/password protection • Copy protection • Block protection Access protection  • protection of confidential configuration data • Protection level: Write protection • Protection level: Read/write protection	Yes
configuration / programming / header  Programming language  — LAD — FBD — SCL  Know-how protection  • User program protection/password protection • Copy protection • Block protection  Access protection  • protection of confidential configuration data • Protection level: Write protection  • Protection level: Read/write protection • Protection level: Complete protection	Yes Yes Yes Yes Yes Yes Yes Yes Yes
configuration / programming / header  Programming language  — LAD — FBD — SCL  Know-how protection  • User program protection/password protection • Copy protection • Block protection  Access protection  • protection of confidential configuration data • Protection level: Write protection  • Protection level: Read/write protection • Protection level: Complete protection  programming / cycle time monitoring / header	Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection  • User program protection/password protection • Copy protection • Block protection  Access protection  • protection of confidential configuration data • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection programming / cycle time monitoring / header • adjustable	Yes
configuration / programming / header  Programming language  — LAD — FBD — SCL  Know-how protection  • User program protection/password protection • Copy protection • Block protection  Access protection  • protection of confidential configuration data • Protection level: Write protection  • Protection level: Read/write protection • Protection level: Complete protection  programming / cycle time monitoring / header	Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection • User program protection/password protection • Copy protection • Block protection Access protection • protection of confidential configuration data • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection programming / cycle time monitoring / header • adjustable  Dimensions  Width	Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection • User program protection/password protection • Copy protection • Block protection Access protection • protection of confidential configuration data • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection programming / cycle time monitoring / header • adjustable  Dimensions	Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection • User program protection/password protection • Copy protection • Block protection Access protection • protection of confidential configuration data • Protection level: Write protection • Protection level: Read/write protection • Protection level: Complete protection programming / cycle time monitoring / header • adjustable  Dimensions  Width	Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection	Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection	Yes
configuration / programming / header Programming language — LAD — FBD — SCL Know-how protection	Yes