## **SIEMENS**

## Data sheet

6ES7212-1AE40-0XB0

SIMATIC S7-1200, CPU 1212C, compact CPU, DC/DC/DC, onboard I/O: 8 DI 24 V DC; 6 DO 24 V DC; 2 AI 0-10 V DC, Power supply: DC 20.4-28.8V DC, Program/data memory 75 KB



General information	
Product type designation	CPU 1212C DC/DC/DC
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
<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V
• permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption (rated value)	400 mA; CPU only
Current consumption, max.	1 200 mA; CPU with all expansion modules

Inrush current, max.	12 A; at 28.8 V DC
l²t	0.5 A²·s
Output current for backplane bus (5 V DC), max.	1 000 mA; Max. 5 V DC for SM and CM
Tot backplane bus (5 v bo), max.	1 000 IIIA, Iviax. 3 v DC Ioi Givi and Givi
Encoder supply	
24 V encoder supply	
• 24 V	L+ minus 4 V DC min.
Power loss	
Power loss, typ.	9 W
Momory	
Memory Work memory	
• integrated	75 kbyte
• expandable	No
Load memory	
• integrated	2 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
	2.0 ps, / monastion
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
ОВ	
Number, max.	Limited only by RAM for code
Data areas and the investoration in	
Data areas and their retentivity  Retentive data area (incl. timers, counters, flags),	10 kbyte
max.	
Flag	
Number, max.	4 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
Hardwara configuration	
Hardware configuration  Number of modules per system, max.	3 comm. modules, 1 signal board, 2 signal modules
Humber of modules per system, max.	o comm. modules, i signal board, 2 signal modules
Time of day	
Clock	
<ul><li>Hardware clock (real-time)</li></ul>	Yes
Backup time	480 h; Typical
<ul> <li>Deviation per day, max.</li> </ul>	±60 s/month at 25 °C
Digital inputs	
Number of digital inputs	8; Integrated
<ul> <li>of which inputs usable for technological functions</li> </ul>	4; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	8
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	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 counter/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	6
• of which high-speed outputs	4; 100 kHz Pulse Train Output
Limitation of inductive shutdown voltage to	L+ (-48 V)
Switching capacity of the outputs	
• with resistive load, max.	0.5 A

• on lamp load, max.	5 W
Output voltage	
• for signal "0", max.	0.1 V; with 10 kOhm load
• for signal "1", min.	20 V
Output current	
• for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.1 mA
Output delay with resistive load	
• "0" to "1", max.	1 μs
• "1" to "0", max.	5 μs
Switching frequency	
• of the pulse outputs, with resistive load, max.	100 kHz
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Analog inputs	
Analog inputs  Number of analog inputs	2
Input ranges	_
• Voltage	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
Input resistance (0 to 10 V)	≥100k ohms
Cable length	
• shielded, max.	100 m; twisted and shielded
Analog outputs  Number of analog outputs	0
Number of analog outputs	O
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
<ul> <li>Resolution with overrange (bit including sign),</li> </ul>	10 bit
max.	
<ul> <li>Integration time, parameterizable</li> </ul>	Yes
<ul> <li>Conversion time (per channel)</li> </ul>	625 μs
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
automatic detection of transmission rate	Yes

Autocrossing Yes  Interface types  • Number of ports • Interface types  • Number of ports • PROFINET IO Controller • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Ves • Media redundancy • No  PROFINET IO Controller • Transmission rate, max.  100 Mbit/s  Services  - PG/OP communication - S 7 routing - Isochronous mode - Open IE communication - PROFINET IO Controller  - IRT - MRP - MRP - MRP - MRP - MRP - PROFIlenergy - Prioritized startup - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/ideactivated, max Updating time  PROFINET IO Device  Services  - PG/OP communication - S 7 routing - S 8 routing - S 7 routing - S 7 routing - S 7 routing - S 7 routing - S 2 routing - S 2 routing - S 2 routing - S 3 routing - S 3 routing - S 2 routing - S 3 routing - S 3 routing - S 2 routing - S 3 routing - S 4 routing - S 4 routing - S 5 routing - S 6 routing - S 7 routing	Autonegotiation	Yes
Interface types  • Number of ports • integrated switch  FROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Ves • Summarication • Ves • Media redundancy • Media redundancy • Media redundancy • Transmission rate, max.  FROFINET IO Controller • Transmission rate, max.  Services  - PG/OP communication - ST routing - IRT - MRP - MRPD - PROFILE communication - PROFILE communication - PROFILE communication - PROFILE communication - Ves - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Of which in line, max Of which in line, max Updating time  - PROFINET IO Device  Services  - PG/OP communication - Transmission rate, max 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 - ST routing - Sr r		
Number of ports  Integrated switch  Integrated swi		163
Integrated switch  Functionality  PROFINET IO Controller PROFINET IO Device PROFINET IO Device SiMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller  Transmission rate, max.  PGOP communication PGOP		1
Functionality  PROFINET IO Device PROFINET IO Device PROFINET IO Device SIMATIC communication Yes Open IE communication Yes Media redundancy No  PROFINET IO Controller Transmission rate, max. 100 Mbit/s  Services PC/C/P communication Yes Services PC/C/P communication Yes No PROFINET IO Controller Transmission rate, max. 100 Mbit/s  Services PC/C/P communication Yes Services PC/C/P communication Yes No PROFINET IO Revision No No PROFINET IO Devices with prioritized startup, max. Number of IO Devices for RT, max. Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. Of which in line, max. Activation/deactivation of IO Devices No No PROFINET IO Device  PROFINET IO Device  Services PC/C/P communication Yes Services PC/C/P communication No	·	
PROFINET IO Controller PROFINET IO Device SiMATIC communication Yes Open IE communication Web server Media redundancy No  PROFINET IO Controller  Transmission rate, max. 100 Mbit/s  Services  PG/OP communication Yes No PROFINET IO Controller  Transmission rate, max. 100 Mbit/s  Services  PG/OP communication Yes Services No No Open IE communication Yes IRT No MRP No MRP No MRP No PROFlenergy No PROFlenergy No Prioritized startup No No No No Prioritized startup No No No No No No No PROFINET IO Devices with prioritized startup No No No No No No Profitized startup No No Profitized startup No No No No No No PROFINET IO Devices with prioritized startup No		
PROFINET IO Device SIMATIC communication Yes Open IE communication Yes Web server Media redundancy No PROFINET IO Controller  Transmission rate, max. 100 Mbit/s  Services  PG/OP communication Yes Services  PROFIle Ic communication Yes Services  PROFIle Ic communication Yes Services  PG/OP communication Yes Services		Yes
SIMATIC communication Open IE communication Ves Web server Media redundancy No  PROFINET IO Controller  Transmission rate, max.  100 Mbit/s  Services  PG/OP communication Yes Sorvices  PROFInergy No No PROFIchenergy No PROFIchenergy No PROFIchenergy No Prioritized startup Prioritized startup Sorvices Number of IO devices with prioritized Sorvices  Number of Connectable IO Devices, max. Sorvices  PEOFINET IO Devices  Services  PG/OP communication Yes Sorvices		
Open IE communication  Web server  Media redundancy  PROFINET IO Controller  Transmission rate, max.  PG/OP communication  Services  - PG/OP communication  Services  - PG/OP communication  Services  - PG/OP communication  Yes  - S7 routing  No  - Open IE communication  IRT  Mo  MRP  MRP  No  - MRPD  PROFInergy  Prioritized startup  Number of IO devices with prioritized startup, max.  - Of which in line, max.  - of which in line, max.  - Updating time  PROFINET IO Device  Services  - PG/OP communication  Yes  - PG/OP communication  Yes  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		
Media redundancy Mo  PROFINET IO Controller  Transmission rate, max.  PG/OP communication Services  PG/OP communication Sommunication 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 Sommunication		Yes
Media redundancy  * Transmission rate, max.  * Transmission rate, max.  - PG/OP communication - S7 routing - Isochronous mode - Open IE communication - IRT - MRP - MRP - MRPD - PROFIenergy - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max of which in line, max Of which in line, max Updating time  PROFINET IO Device  **Services**  PROFINET IO Device  Services**  PGOP Communication  Yes - PGOP Communication - S7 routing - S7 routing - S7 routing - Isochronous mode  **No Media redundance - Yes - Number of Locuted Power	•	Yes
PROFINET IO Controller  • Transmission rate, max.  Services  - PG/OP communication Yes - S7 routing Yes - Isochronous mode No - Open IE communication Yes - IRT No - MRP No - MRPD No - PROFInergy No - Prioritized startup Yes - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Of which in line, max Activation/deactivation of IO Devices Yes - Number of IO Devices that can be simultaneously activated/deactivated, max Updating time  PROFINET IO Device  Services - PG/OP communication Yes - S7 routing Yes - Isochronous mode  100 Mbit/s  100 Miting  100 Mbit/s  100 Miting  100 Mit		No
Transmission rate, max.  Services  - PG/OP communication Yes - S7 routing Yes - Isochronous mode No - Open IE communication Yes - IRT No - MRP No - MRPD No - PROFINET IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max Updating time  PROFINET IO Device  Services - PG/OP communication Yes - S7 routing Yes - Isochronous mode  Yes - Services - PG/OP communication Yes - Sor routing Yes - Isochronous mode  Yes - Isochronous mode  Yes - Sor routing Yes - Isochronous mode  Yes - Sor routing -	-	
Services  - PG/OP communication Yes - S7 routing Yes - Isochronous mode No - Open IE communication Yes - IRT No - MRP No - MRPD No - PROFINET IO Device Services - PG/OP communication I Yes - PGOPEN Communication Yes - Trouting Yes - Provided tartup Yes - Number of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max PROFINET IO Device Services - PG/OP communication Yes - S7 routing Yes - Isochronous mode		100 Mbit/s
PG/OP communication S7 routing S7 routing Isochronous mode Open IE communication IRT MRP MRP MRPD MRPD PROFINET IO Devices Number of IO Devices S7 routing Pupdating time MRP		
S7 routing Yes Isochronous mode No Open IE communication Yes IRT No MRP No MRPD No PROFINET IO Devices S7 routing No S7 routing Yes S7 routing No PROFINET IO Devices mode RRD No S7 routing Yes Number of lo Devices No Red No No No No Number of lo Devices of RT, max Of which in line, max Line		Yes
- Isochronous mode - Open IE communication - IRT - MRP - MRP - MRPD - MRPD - PROFlenergy - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max of which in line, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max 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  PROFINET IO Device  Services - PG/OP communication - S7 routing - Isochronous mode - No		
- Open IE communication - IRT - MRP - MRP - MRPD - MRPD - PROFlenergy - Prioritized startup - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max of which in line, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max 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 - PG/OP communication - S7 routing - Isochronous mode - No		No
- IRT No - MRP - MRPD No - PROFlenergy No - Prioritized startup Yes - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max. 16 - Number of connectable IO Devices for RT, max of which in line, max. 16 - Activation/deactivation of IO Devices Yes - Number of IO Devices that can be simultaneously activated/deactivated, max 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		Yes
- MRP - MRPD No - PROFlenergy No - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max Number of connectable IO Devices for RT, max of which in line, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max 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 - S7 routing - Isochronous mode  No		
- MRPD - PROFlenergy - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max Number of connectable IO Devices for RT, max of which in line, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max 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 - S7 routing - Isochronous mode  No		No
PROFlenergy Prioritized startup Prioritized startup Number of IO devices with prioritized startup, max. Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. Number of connectable IO Devices for RT, max. Of which in line, max. Activation/deactivation of IO Devices Number of IO Devices that can be simultaneously activated/deactivated, max. 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 Isochronous mode No		
- Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max Of which in line, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max 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 - S7 routing - Isochronous mode  Yes - Isochronous mode		No
Number of IO devices with prioritized startup, max.  Number of connectable IO Devices, max.  Number of connectable IO Devices for RT, max.  of which in line, max.  of which in line, max.  Activation/deactivation of IO Devices  Number of IO Devices that can be simultaneously activated/deactivated, max.  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 S7 routing Isochronous mode  16  16  16  17  16  17  16  17  16  17  18  19  19  19  19  19  19  19  19  19		
<ul> <li>Number of connectable IO Devices, max.</li> <li>Number of connectable IO Devices for RT, max.</li> <li>of which in line, max.</li> <li>Activation/deactivation of IO Devices</li> <li>Number of IO Devices that can be simultaneously activated/deactivated, max.</li> <li>Updating time</li> <li>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.</li> </ul> PROFINET IO Device Services <ul> <li>PG/OP communication</li> <li>Yes</li> <li>S7 routing</li> <li>Isochronous mode</li> <li>No</li> </ul>	— Number of IO devices with prioritized	16
max.  — of which in line, max.  — Activation/deactivation of IO Devices  — Number of IO Devices that can be simultaneously activated/deactivated, max.  — 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 — S7 routing — Isochronous mode  No		16
<ul> <li>— Activation/deactivation of IO Devices</li> <li>— Number of IO Devices that can be simultaneously activated/deactivated, max.</li> <li>— Updating time</li> <li>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.</li> <li>PROFINET IO Device</li> <li>Services</li> <li>— PG/OP communication</li> <li>— S7 routing</li> <li>— Isochronous mode</li> <li>Yes</li> <li>No</li> </ul>		16
— Number of IO Devices that can be simultaneously activated/deactivated, max.  — 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 — S7 routing — Isochronous mode  No	— of which in line, max.	16
simultaneously activated/deactivated, max.  — 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 — S7 routing — Isochronous mode  No	<ul> <li>Activation/deactivation of IO Devices</li> </ul>	Yes
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 - S7 routing - Isochronous mode  Yes No		8
Services  PG/OP communication Yes S7 routing Yes Isochronous mode No	— Updating time	communication component set for PROFINET IO, on the number
<ul> <li>— PG/OP communication</li> <li>— S7 routing</li> <li>— Isochronous mode</li> <li>Yes</li> <li>No</li> </ul>	PROFINET IO Device	
<ul><li>— S7 routing</li><li>— Isochronous mode</li><li>No</li></ul>	Services	
— Isochronous mode No	— PG/OP communication	Yes
	— S7 routing	Yes
— Open IE communication Yes	— Isochronous mode	No
	— Open IE communication	Yes

— IRT	No
— MRP	No
— MRPD	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
PROFIBUS	Yes; CM 1243-5 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
<ul> <li>several passive connections per port, supported</li> </ul>	Yes
• ISO-on-TCP (RFC1006)	Yes
— Data length, max.	8 kbyte
• UDP	Yes
— Data length, max.	1 472 byte
Web server	
User-defined websites	Yes
Further protocols	
• MODBUS	Yes

S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes
<ul><li>User data per job, max.</li></ul>	See online help (S7 communication, user data size)
Web server	
• supported	Yes
Number of connections	
• overall	16; dynamically

Status/control	
Status/control variable	Yes
• Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
• Forcing	Yes
Diagnostic buffer	
• present	Yes
Traces	
Number of configurable Traces	2
<ul> <li>Memory size per trace, max.</li> </ul>	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
• RUN/STOP LED	Yes
• ERROR LED	Yes
• MAINT LED	Yes
Integrated Functions	
Number of counters	4
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	4; With integrated outputs
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
Limit frequency (pulse)	100 kHz
Potential separation	
Potential separation digital inputs	M
Potential separation digital inputs	No 4
between the channels, in groups of	1
Potential separation digital outputs	V
<ul> <li>Potential separation digital outputs</li> </ul>	Yes
• between the channels	No
<ul> <li>between the channels, in groups of</li> </ul>	1
EMC	
Interference immunity against discharge of static electr	
<ul> <li>Interference immunity against discharge of static electricity acc. to IEC 61000-4-2</li> </ul>	Yes
<ul> <li>Test voltage at air discharge</li> </ul>	8 kV

<del>-</del>	C IA/
Test voltage at contact discharge	6 kV
Interference immunity to cable-borne interference	
<ul> <li>Interference immunity on supply lines acc. to IEC 61000-4-4</li> </ul>	Yes
<ul> <li>Interference immunity on signal cables acc. to IEC 61000-4-4</li> </ul>	Yes
Interference immunity against voltage surge	
• on the supply lines acc. to IEC 61000-4-5	Yes
Interference immunity against conducted variable distur	bance induced by high-frequency fields
<ul> <li>Interference immunity against high-frequency radiation acc. to IEC 61000-4-6</li> </ul>	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	
Degree of protection acc. to EN 60529	
• IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	Yes
Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-20 °C
• max.	60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 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
	1 080 hPa
Operation, max.	660 hPa
Storage/transport, min.	
Storage/transport, max.	1 080 hPa
Relative humidity	05.0/
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	
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
<ul> <li>Protection level: Read/write protection</li> </ul>	Yes
<ul> <li>Protection level: Complete protection</li> </ul>	Yes
Cycle time monitoring	
adjustable	Yes
Dimensions	
Width	90 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	370 g
last modified:	02/28/2018