SIEMENS

Data sheet

General information

6AG1212-1BE40-4XB0

SIPLUS S7-1200 CPU 1212C AC/DC/relay for medial exposure with conformal coating based on 6ES7212-1BE40-0XB0 . compact CPU, AC/DC/relay, onboard I/O: 8 DI 24 V DC 6 DO relay 0.5 A 2 AI 0-10 V DC, Power supply: AC 85-264V AC @ 47-63Hz, Program/data memory 30 KB



General information	
Product type designation	CPU 1212C AC/DC/relay
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)	264 V
Line frequency	
 permissible range, lower limit 	47 Hz
• permissible range, upper limit	63 Hz
Input current	
Current consumption (rated value)	80 mA at 120 V AC; 40 mA at 240 V AC
Current consumption, max.	240 mA at 120 V AC; 120 mA at 240 V AC
Inrush current, max.	20 A; at 264 V
Output current	
for backplane bus (5 V DC), max.	1 000 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.	11 W
Memory	
Work memory	
 integrated 	75 kbyte
• expandable	No
Load memory	
 integrated 	1 Mbyte
 Plug-in (SIMATIC Memory Card), max. 	with SIMATIC memory card
Backup	
• present	Yes; maintenance-free
 without battery 	Yes
CPU processing times	
for bit operations, typ.	0.085 μs; / Operation
for word operations, typ.	1.7 μs; / Operation
for floating point arithmetic, typ.	2.3 μs; / Operation
CPU-blocks Number of blocks (total)	DBs, FCs, FBs, counters and timers. The maximum number of
	addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used
OB	
• Number, max.	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags),	10 kbyte
max.	
Flag	
• Number, max.	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
Hardware configuration	
Number of modules per system, max.	3 comm. modules, 1 signal board, 2 signal modules
Time of day	

Clock	
 Hardware clock (real-time) 	Yes
Backup time	480 h; Typical
 Deviation per day, max. 	60 s/month at 25 °C
Digital inputs	
Number of digital inputs	8; Integrated
 of which inputs usable for technological functions 	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 current	
● for signal "1", typ.	1 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
for interrupt inputs	
- parameterizable	Yes
for technological functions	
— parameterizable	Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 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; Relays
Switching capacity of the outputs	
 with resistive load, max. 	2 A
 on lamp load, max. 	30 W with DC, 200 W with AC
Output delay with resistive load	
● "0" to "1", max.	10 ms; max.
• "1" to "0", max.	10 ms; max.
Switching frequency	
 of the pulse outputs, with resistive load, max. 	1 Hz

Relay outputs	
Number of relay outputs	6
 Number of operating cycles, max. 	mechanically 10 million, at rated load voltage 100 000
Cable length	
 shielded, max. 	500 m
• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	
Voltage	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
 Input resistance (0 to 10 V) 	≥100k ohms
Cable length	
• shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	0
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
 Resolution with overrange (bit including sign), 	10 bit
max.	
 Integration time, parameterizable 	Yes
 Conversion time (per channel) 	625 µs
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Protocols	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
Open IE communication	Yes
• Web server	Yes
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s
manomosion rate, max.	

Services	
— Number of connectable IO Devices, max.	16
PROFINET IO Device	
Services	
— Shared device	Yes
— Number of IO Controllers with shared	2
device, max.	
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIBUS	Yes; CM 1243-5 required
AS-Interface	Yes
Protocols (Ethernet)	
• TCP/IP	Yes
Open IE communication	
• TCP/IP	Yes
• ISO-on-TCP (RFC1006)	Yes
• UDP	Yes
Web server	
• supported	Yes
User-defined websites	Yes
Further protocols	
• MODBUS	Yes
Communication functions	
S7 communication	
supported	Yes
• as server	Yes
• as client	Yes
Number of connections	
• overall	16; dynamically
Test commissioning functions	
Status/control	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
Forcing	Yes
Diagnostic buffer	
• present	Yes
Traces	
 Number of configurable Traces 	2; Up to 512 KB of data per trace are possible
Integrated Functions	

Counting frequency (counter) max. 100 kHz Frequency measurement Yes controlled positioning axes, max. 8 Number of positioning axes via pulse-direction Up to 4 with SB 1222 interface Yes PID controller Yes PID controller Yes Potential separation digital inputs 500V AC for 1 minute • Potential separation digital outputs Felays • Potential separation digital outputs Relays • Detween the channels, in groups of 1 • Potential separation digital outputs Relays • between the channels, in groups of 2 • Detween the channels, in groups of 2 • Detween the channels, in groups of 2 • Interference immunity against discharge of static electricity Yes • Interference immunity against discharge of static electricity acc. to EC 61000-4-2 KV - Test voltage at in cinctardischarge 8 kV - Test voltage at in cinctardischarge 8 kV - Test voltage at indicatic electricity Yes Interference immunity to cable-borne interference Yes • Interference immunity against uotage science Yes IEC 6 1000-4-4 Yes • Interference immunity against uotadues scin to EC 1000-4-5 Yes	Number of counters	4
Frequency measurement Yes controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 8 PID controller Yes PID controller Yes Number of pastioning axes, max. 8 PID controller Yes Number of alarm inputs 4 Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Relays • between the channels, in groups of 2 Potential separation digital outputs Relays • between the channels, in groups of 2 ENC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Yes - Test voltage at air discharge of static electricity 1 • Interference immunity to cable-borne interference Yes • Interference immunity against discharge of skV 1 Itterference immunity on signal cables acc. to IEC 61000-4-2 Yes • Interference immunity on signal cables acc. to IEC 61000-4-3 Yes • Interference immunity against tigh-frequency radiation interference Yes • Interfere		
controlled positioning Yes Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction Up to 4 with SB 1222 interface Yes PID controller Yes Number of alarm inputs 4 Potential separation Formation digital inputs Potential separation digital inputs 500V AC for 1 minute • Potential separation digital outputs Relays • Dotential separation digital outputs Relays • between the channels, in groups of 2 ENO 2 ENO Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Yes - Test voltage at an id ischarge 8 kV - Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference Yes • Interference immunity against ubicharge 8 kV • Interference immunity against ubicharge 8 kV • Interference immunity to cable-borne interference Yes Interference immunity against ubicharge Yes		Yes
Number of position-controlled positioning axes, max. 8 Number of positioning axes via pulse-direction interface Up to 4 with SB 1222 PID controller Yes Number of alarm inputs 4 Potential separation digital inputs 500V AC for 1 minute • Potential separation digital inputs 500V AC for 1 minute • Potential separation digital outputs Relays • Potential separation digital outputs Relays • Potential separation digital outputs Relays • between the channels, in groups of 2 • Determents, in groups of 2 • Determents, in groups of 2 • Interference immunity against discharge of static electricity No • Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity • Interference immunity on supply lines acc. to Yes • Interference immunity on supply lines acc. to Yes • Interference immunity against conducted variable disturbance induced by high-frequency fields Yes • Interference immunity against conducted variable disturbance induced by high-frequency fields Yes • Interference immunity against conducted		Yes
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 500V AC for 1 minute • Potential separation digital outputs 500V AC for 1 minute • Potential separation digital outputs Relays • Potential separation digital outputs Relays • Potential separation digital outputs Relays • between the channels, in groups of 2 Potential separation digital outputs Relays • between the channels, in groups of 2 Interference immunity against discharge of static electricity • Interference immunity against discharge • Interference immunity against discharge 8 kV - Test voltage at all discharge 6 kV Interference immunity on supply lines acc. to IEC 61000-4-4 Yes Interference immunity on supply lines acc. to IEC 61000-4-4 Yes • Interference immunity against voltage surge Yes • on the supply lines acc. to IEC 61000-4-5 Yes Iterference immunity against voltage surge Yes • on the supply lines acc. to IEC 61000-4-6 Yes Iterference immunity against voltage surge Yes • on the supply lines acc. to IEC 61000-4-6 Yes Ite		8
PID controller Yes Number of alarm inputs 4 Potential separation digital inputs 500V AC for 1 minute Potential separation digital inputs between the channels, in groups of 1 Potential separation digital outputs Relays Potential separation digital outputs Relays between the channels, in groups of 2 Interference immunity against discharge of static electricity No Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Test voltage at air discharge RV Test voltage at air discharge RV Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity on supply lines acc. to IEC 61000-4-4 Yes Interference immunity against conducted variable discharge Yes Interference immunity against toildage surge Yes Interference immunity against locables acc. to Yes Interference immunity against ingh-frequency Yes Interference immunity against ingh-frequency Yes Free interference acc. to EN 55 011 Line freence immunity against ingh-frequency Yes; Group 1 Line int		Up to 4 with SB 1222
Number of alarm inputs 4 Potential separation digital inputs 500V AC for 1 minute • Potential separation digital outputs 500V AC for 1 minute • Potential separation digital outputs Relays • Detween the channels No • between the channels No • for thereforence immunity against discharge of static electricity Yes • Interference immunity on signal cables acc. to IEC 61000-4.2 Yes • Interference immunity on signal cables acc. to IEC 61000-4.5 Yes • Interference immunity against voltage surge Yes • on the supply lines acc. to IEC 61000-4.5 Yes Interference immunity against toolduced variable disturbar- Yes Interference immunity against toolduced variable disturbar- Yes Interference immunity against high-frequency radiation acc. to IEC 61000-4	interface	
Potential separation S00V AC for 1 minute Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Relays • Potential separation digital outputs Relays • between the channels No • between the channels No • between the channels, in groups of 2 EMC Enterference immunity against discharge of static electricity • Interference immunity against discharge 8 kV	PID controller	Yes
Potential separation digital inputs 500V AC for 1 minute • Potential separation digital outputs 500V AC for 1 minute • Detential separation digital outputs 1 • Potential separation digital outputs Relays • Detential separation digital outputs Relays • between the channels, in groups of 2 • Detween the channels, in groups of 2 • Interference immunity against discharge of static electricity 1 • Interference immunity on supply lines acc. to Yes IEC 61000-4.4 Ves • Interference immunity on supply lines acc. to Yes Interference immunity against voltage surge • on the supply lines acc. to IEC 61000-4.5 • Interference immunity against voltage surge • on the supply lines acc. to IEC 61000-4.6 Emission of radio interference acc. to EN 55 011 • <td>Number of alarm inputs</td> <td>4</td>	Number of alarm inputs	4
• Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Relays • Potential separation digital outputs Relays • between the channels No • between the channels, in groups of 2 EMC Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 • Test voltage at air discharge 8 kV • Test voltage at ontact discharge 6 kV Interference immunity on supply lines acc. to IEC 61000-4-2 Yes • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes • Interference immunity against voltage surge Yes • on the supply lines acc. to IEC 61000-4-5 Yes Itee 61000-4-4 Yes • Interference immunity against voltage surge Yes • on the supply lines acc. to IEC 61000-4-5 Yes Iteefference immunity against ingh-frequency radiation acc. to IEC 61000-4-5 Yes Interference immunity against voltage surge Yes • on the supply lines acc. to IEC 61000-4-5 Yes Interference immunity against	Potential separation	
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Potential separation digital outputs Relays Potential separation digital outputs Relays No 2 ENCE Interference immunity against discharge of static electricity acc. to IEC 6100-4-2 Yes Interference immunity against discharge 8 kV — Test voltage at air discharge 8 kV — Test voltage at air discharge 8 kV — Test voltage at air discharge 8 kV Interference immunity to cable-borne interference Ves Interference immunity on supply lines acc. to IEC 6100-4-4 Yes Interference immunity on supply lines acc. to IEC 6100-4-5 Yes Interference immunity against voltage surge on the supply lines acc. to IEC 6100-4-5 Interference immunity against voltage surge on the supply lines acc. to IEC 6100-4-5 Interference immunity against voltage surge on the supply lines acc. to IEC 6100-4-5 Interference immunity against voltage surge on the supply lines acc. to IEC 6100-4-5 Interference immunity against high-frequency Yes Interference immunity against high-frequency Yes Interference immunity against woltage surge induced by high-frequency fields Interference immunity against wightigh frequency Yes	 Potential separation digital inputs 	500V AC for 1 minute
• Potential separation digial outputs Relays • between the channels No • between the channels, in groups of 2 EMC ************************************	 between the channels, in groups of 	1
• between the channels No • between the channels, in groups of 2 Interference immunity against discharge of static electricity • Interference immunity against discharge of • Interference immunity against discharge Yes • Interference immunity against discharge 8 kV - Test voltage at air discharge 6 kV Interference immunity to cable-borne interference 6 kV • Interference immunity on supply lines acc. to Yes IEC 61000-4-4 Yes • Interference immunity on signal cables acc. to Yes IEC 61000-4-4 Yes • Interference immunity on signal cables acc. to Yes Interference immunity against voltage surge • on the supply lines acc. to IEC 61000-4-5 Yes Interference immunity against notlated variable disturbace induced by high-frequency fields • Interference immunity against stoph requency • Interference immunity against stoph requency Yes Yes Interference immunity against stoph requency Yes Emission of radio int	Potential separation digital outputs	
• between the channels, in groups of 2 EMC Interference immunity against discharge of static electricity acc. to IEC 6100.4-2 - Test voltage at air discharge 8 kV - Test voltage at air discharge 6 kV Interference immunity to cable-borne interference 6 kV Interference immunity on supply lines acc. to Yes Interference immunity on signal cables acc. to Yes Interference immunity against voltage surge Ves • Interference immunity against voltage surge Yes • on the supply lines acc. to IEC 6100.4-5 Yes Interference immunity against voltage surge induced by high-frequency fields • Interference immunity against voltage surge induced by high-frequency fields • Interference immunity against toonducted variable distumance induced by high-frequency fields Yes • Interference immunity against toonducted variable distumance induced by high-frequency fields Yes; Group 1 • 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 of protection acc. to EN 60529 Yes • IP20 Yes <td> Potential separation digital outputs </td> <td>Relays</td>	 Potential separation digital outputs 	Relays
EMC Interference immunity against discharge of static electricity • Interference immunity against discharge Yes • Test voltage at air discharge 8 kV • Test voltage at air discharge 6 kV Interference immunity to cable-borne interference 6 kV • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes • Interference immunity on signal cables acc. to IEC 61000-4-4 Yes • Interference immunity against voltage surge • on the supply lines acc. to IEC 61000-4-5 • Interference immunity against voltage surge • on the supply lines acc. to IEC 61000-4-5 • Interference immunity against voltage surge • on the supply lines acc. to IEC 61000-4-5 • Interference immunity against conducted variable disturbance induced by high-frequency fields • Interference inmunity against conducted variable disturbance induced by high-frequency fields • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Yes Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • 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 of protection acc. to EN 60529 • IP20 Yes	 between the channels 	No
Interference immunity against discharge of static electricity Yes Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Yes — Test voltage at air discharge 8 kV — Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference 6 kV Interference immunity on supply lines acc. to Yes IEC 61000-4-4 Yes Interference immunity against voltage surge Yes Interference immunity against tigh-frequency Yes Interference immunity against high-frequency Yes Interference immunity against areas Yes; Group 1 Limit class A, for use in industrial 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 <t< td=""><td> between the channels, in groups of </td><td>2</td></t<>	 between the channels, in groups of 	2
Interference immunity against discharge of static electricity Yes Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Yes — Test voltage at air discharge 8 kV — Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference 6 kV Interference immunity on supply lines acc. to Yes IEC 61000-4-4 Yes Interference immunity against voltage surge Yes Interference immunity against tigh-frequency Yes Interference immunity against high-frequency Yes Interference immunity against areas Yes; Group 1 Limit class A, for use in industrial 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 <t< td=""><td>EMC</td><td></td></t<>	EMC	
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 signal cables acc. to IEC 61000-4-4 • Interference immunity against voltage surge • on the supply lines acc. to IEC 61000-4-5 Yes Interference immunity against voltage surge • on the supply lines acc. to IEC 61000-4-5 Yes Interference immunity against conducted variable disturbance induced by high-frequency fields • Interference immunity against high-frequency Yes Interference immunity against high-frequency Yes Interference immunity against high-frequency Yes • Interference immunity against high-frequency Yes • Interference intrustif against high-frequency Yes; Group 1 • Limit class B, 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 of protection acc. to EN 60529 • IP20 Yes Ambient conditions		city
- Test voltage at air discharge8 kV- Test voltage at contact discharge6 kVInterference immunity to cable-borne interferenceYes• Interference immunity on supply lines acc. to IEC 61000-4-4Yes• Interference immunity on signal cables acc. to IEC 61000-4-4Yes• Interference immunity against voltage surgeYes• on the supply lines acc. to IEC 61000-4-5YesInterference immunity against conducted variable disturation acc. to IEC 61000-4-6Yes• Interference immunity against high-frequency radiation acc. to IEC 61000-4-6YesEmission of radio interference acc. to EN 55 011Yes; Group 1• Limit class A, for use in industrial areas • Limit class B, for use in residential areasYes; Group 1• Limit class S of protection with the limits for Class B according to EN 55011YesDegree and class of protection • IP20YesAmbient conditionsYes		Yes
— Test voltage at contact discharge6 kVInterference immunity to cable-borne interference• Interference immunity on supply lines acc. to IEC 61000-4-4Yes• Interference immunity on signal cables acc. to IEC 61000-4-4YesInterference immunity against voltage surge• on the supply lines acc. to IEC 61000-4-5Yes• 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 high-frequency radiation acc. to IEC 61000-4-6YesEmission of radio interference acc. to EN 55 011Yes; Group 1• Limit class A, for use in industrial areas • Limit class B, for use in residential areasYes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011Degree and class of protection • IP20YesAmbient conditionsYes	•	8 kV
Interference immunity to cable-borne interference Yes Interference immunity on supply lines acc. to IEC 61000-4-4 Yes Interference immunity on signal cables acc. to IEC 61000-4-4 Yes Interference immunity against voltage surge Yes on the supply lines acc. to IEC 61000-4-5 Yes Interference immunity against conducted variable disturbance induced by high-frequency fields Yes Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Yes Emission of radio interference acc. to EN 55 011 Yes; Group 1 Limit class A, for use in industrial 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 Yes Degree of protection acc. to EN 60529 Yes IP20 Yes		6 kV
• Interference immunity on supply lines acc. to IEC 61000-4-4Yes• Interference immunity on signal cables acc. to IEC 61000-4-4YesInterference immunity against voltage surge• on the supply lines acc. to IEC 61000-4-5Yes• on the supply lines acc. to IEC 61000-4-5YesInterference immunity against conducted variable disturbance induced by high-frequency fields• Interference immunity against conducted variable disturbance induced by high-frequency fields• Interference immunity against high-frequency radiation acc. to IEC 61000-4-6YesEmission of radio interference acc. to EN 55 011• Limit class A, for use in industrial areas• Limit class A, for use in industrial areasYes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011Degree and class of protectionPersDegree of protection acc. to EN 60529 • IP20Yes		
Interference immunity against voltage surge • on the supply lines acc. to IEC 61000-4-5 Yes 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 • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Yes Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas Yes; Group 1 • Limit class of protection Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 Degree and class of protection Yes Ambient conditions Yes	 Interference immunity on supply lines acc. to 	Yes
 on the supply lines acc. to IEC 61000-4-5 Yes Interference immunity against conducted variable disturance induced by high-frequency fields Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Yes Emission of radio interference acc. to EN 55 011 Limit class A, for use in industrial areas 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 Degree and class of protection Ves 		Yes
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; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 Degree and class of protection Ves Image: Page of protection acc. to EN 60529 Yes Image: Image: Page of protection acc. to EN 60529 Yes	Interference immunity against voltage surge	
 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 Degree and class of protection Degree of protection acc. to EN 60529 IP20 Yes 	 on the supply lines acc. to IEC 61000-4-5 	Yes
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 Yes • IP20 Yes	Interference immunity against conducted variable distur	bance induced by high-frequency fields
 Limit class A, for use in industrial 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 Degree of protection acc. to EN 60529 IP20 Yes Ambient conditions 		Yes
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 Ambient conditions	Emission of radio interference acc. to EN 55 011	
with the limits for Class B according to EN 55011 Degree and class of protection Degree of protection acc. to EN 60529 • IP20 Ambient conditions	Limit class A, for use in industrial areas	Yes; Group 1
Degree of protection acc. to EN 60529 • IP20 Yes	 Limit class B, for use in residential areas 	
IP20 Yes Ambient conditions	Degree and class of protection	
Ambient conditions	Degree of protection acc. to EN 60529	
	• IP20	Yes
Free fall	Ambient conditions	

• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-20 °C; = Tmin; Startup @ 0 °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
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	2 000 m
 Ambient air temperature-barometric pressure- altitude 	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m); above 2 000 m max. 132 V AC
Relative humidity	
 With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Vibrations	
 Vibration resistance during operation acc. to IEC 60068-2-6 	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
 Operation, tested according to IEC 60068-2-6 	Yes
Shock testing	
 tested according to IEC 60068-2-27 	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Resistance	
Coolants and lubricants	
 — Resistant to commercially available coolants and lubricants 	Yes
Use in stationary industrial systems	
 — to biologically active substances according to EN 60721-3-3 	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
 — to chemically active substances according to EN 60721-3-3 	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *
 — to mechanically active substances according to EN 60721-3-3 	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
 — to biologically active substances according to EN 60721-3-6 	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request

 to chemically active substances according to EN 60721-3-6 to mechanically active substances according to EN 60721-3-6 	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); * Yes; Class 6S3 incl. sand, dust; *
Remark	
 — Note regarding classification of environmental conditions acc. to EN 60721 	* The supplied plug covers must remain in place over the unused interfaces during operation!
Configuration	
Programming	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Cycle time monitoring	
• adjustable	Yes
Dimensions	
Width	90 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	425 g
last modified:	07/29/2018