SIEMENS

Data sheet

6ES7212-1AE31-0XB0



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 50 KB

General information	
Product type designation	CPU 1212C DC/DC/DC
Engineering with	
 Programming package 	STEP 7 V11 SP2 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
Load voltage L+	
Rated value (DC)	24 V
 permissible range, lower limit (DC) 	20.4 V
 permissible range, upper limit (DC) 	28.8 V
Input current	
Current consumption, max.	1.2 A; 24 V DC
Inrush current, max.	12 A; at 28.8 V DC
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	Permissible range: 20.4V to 28.8V
Power loss	
Power loss, typ.	9 W
Memory	
Work memory	
integrated	50 kbyte
expandable	No
Load memory	
integrated	1 Mbyte
Backup	
present	Yes; maintenance-free
without battery	Yes
CPU processing times	
for bit operations, typ.	0.085 µs; / instruction
for word operations, typ.	1.7 µs; / instruction
for floating point arithmetic, typ.	2.5 µs; / instruction
CPU-blocks	
Number of blocks (total)	DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the

	entire working memory can be used
OB	
Number, max.	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	10 kbyte
Flag • Size, max.	4 kbyte; Size of bit memory address area
	4 Novie, Size of bit memory address area
Address area	
I/O address area	4.004 hits
Inputs	1 024 byte
Outputs	1 024 byte
Process image	1 khuta
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	Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz
Cable length	
Cable length shielded, max. 	500 m: 50 m for technological functions
	500 m; 50 m for technological functions 300 m; for technological functions: No
unshielded, max.	
Digital outputs	
Number of digital outputs	6
of which high-speed outputs	4; 100 kHz Pulse Train Output
Short-circuit protection	No; to be provided externally
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
Relay outputs	
 Number of relay outputs 	0
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	165
• 0 to +10 V	Yes
— Input resistance (0 to 10 V)	≥100k ohms
Cable length	100 my twisted and shields d
• shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	0
Cable length	
 shielded, max. 	100 m; shielded, twisted pair
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
e conversion time (per onamier)	020 po
Encoder	
Encoder	
Connectable encoders	No.
Connectable encoders 2-wire sensor 	Yes
Connectable encoders • 2-wire sensor 1. Interface	
Connectable encoders 2-wire sensor 	Yes PROFINET
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated	PROFINET Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type	PROFINET
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated	PROFINET Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate	PROFINET Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation	PROFINET Yes Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing	PROFINET Yes Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types	PROFINET Yes Yes Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet)	PROFINET Yes Yes Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller	PROFINET Yes Yes Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller Protocols	PROFINET Yes Yes Yes Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller Protocols Supports protocol for PROFINET IO	PROFINET Yes Yes Yes Yes Yes Yes
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Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface	PROFINET Yes Yes Yes Yes Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet)	PROFINET Yes Yes Yes Yes Yes Yes Yes No Yes No Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autorcossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP	PROFINET Yes Yes Yes Yes Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller Protocols Supports protocol for PROFINET IO PROFISATE PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes No Yes Yes Yes
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Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller Protocols Supports protocol for PROFINET IO PROFISATE PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP	PROFINET Yes Yes Yes Yes Yes Yes Yes Yes No Yes Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autorossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server	PROFINET Yes Yes Yes Yes Yes Yes Yes No Yes Yes Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller Protocols Supports protocol for PROFINET IO PROFISATE PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported	PROFINET Yes Yes
Connectable encoders • 2-wire sensor 1. Interface Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller Protocols Supports protocol for PROFINET IO PROFISATE PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites	PROFINET Yes Yes

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se client Yes Test commissioning functions Yes Sistussicontrol variable trupbicouptus, memory bits, DBs, distributed I/Os, timers, counters Forcing Yes • Forcing Yes • Forcing Yes • present Yes • Outrain 4 • Number of Journers 4 • Counting fequency, max. 100 H4z • Forcing Yes • Counting fequency, max. 100 H4z • Counting fequency (max) 4 • Number of also supports 2 • Unit frequency (pulse) 100 H4z • Detential separation digital inputs 500V AC for 1 minute • Detential separation digital inputs 500V AC for 1 minute • Detential separation digital inputs Yes • Detent		
Test commissioning functions Statuscontrol • Struiscontrol variable Yes • Struiscontrol variable Yes • Forcing Yes • Diagnostic buffer Yes • Diagnostic buffer Yes • Counting frequency, max. 100 kHz • Counting frequency, max. 100 kHz • Frequency measurement Yes • Pill controller Yes • Potomoller Yes • Outroller separation 4 • Number of pulse outputs 2 • Integrated film inputs 500V AC for 1 minute • Detential separation digital inputs 500V AC for 1 minute • Extrement sing groups of 1 • Potential separation digital inputs 500 V AC for 1 minute • Extrement sing groups of 1 • Potential separation digital outputs Yes • Extrement sing groups of 1 • Potential separation digital outputs Yes • Extrement sing groups of 1 • Partial separation digital outputs Yes • Extrement sing groups		
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• Process it Yes Diagnostic buffer • present • present Yes Integrated Functions 4 • Countier 4 • • Counting frequency, max. 100 kHz • Frequency measurement Yes • Pito controlled Yes • Number of slarm inputs 4 • Potential separation 2 • Init frequency (pulse) 100 kHz • Potential separation digital inputs 500V AC for 1 minute • Debreview the channels, in groups of 1 • Potential separation digital outputs Yes • Debreview the channels, in groups of 1 • Detritial difference * • Detritial difference * • Interference immunity against discharge of static electricity * • Interference immunity against discharge of static electricity Yes		
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Counter 4 • Number of counters 4 • Counting frequency, max. 100 kHz Frequency measurement Yes Outroited positioning Yes PID controller Yes Number of alarm inputs 4 Number of pulse outputs 2 Limit frequency (pulse) 100 kHz Potential separation digital inputs 500V AC for 1 minute • Potential separation digital inputs 500V AC for 1 minute • Detential separation digital outputs Yes • Potential separation digital outputs Yes • Detential adjutal outputs Yes • Detential adjutal outputs Yes • Detween the channels, in groups of 1 Permissible potential difference No • Detween difference immunity against discharge of static electricity 6 kV • Interference immunity against discharge 8 kV • Test voltage at air discharge 8 kV • Interference immunity against high-frequency 6 kV Interference immunity against high-frequency	Integrated Functions	
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Frequency measurement Yes Controlled positioning Yes PID controlled Yes Number of pulse outputs 2 Limit frequency (pulse) 100 kHz Potential separation digital inputs 500V AC for 1 minute • Potential separation digital outputs 500V AC for 1 minute • Potential separation digital outputs 500V AC for 1 minute • Detential separation digital outputs Yes • Potential separation digital outputs Yes • Detential separation digital outputs Yes • Detween the channels, in groups of 1 Pormissible potential difference Testove Interference immunity against discharge of static electricity Yes • Interference immunity against discharge 8 kV • Interference immunity on supply lines acc. to IEC 61000-4.2 8 kV • Interference immunity on supply lines acc. to IEC 61000-4.5 Yes <td></td> <td>4</td>		4
Frequency measurement Yes Controlled positioning Yes PID controller Yes Number of alarm inputs 4 Number of pulse outputs 2 Limit frequency (pulse) 100 kHz Potential separation digital inputs 500V AC for 1 minute • Potential separation digital inputs 500V AC for 1 minute • Detential separation digital outputs Yes • Potential separation digital outputs Yes • Detween the channels, in groups of 1 Parmissibio potential difference 500 V DC between 24 V DC and 5 V DC EMC Interference immunity against discharge of static electricity • Interference immunity against discharge 6 kV Interference immunity on signal cables acc. to IEC f1000-4.2 Yes • Interference immunity on signal cables acc. to IEC f1000-4.4 Yes • Interference immunity on signal cables acc. to IEC f1000-4.4 Yes • Interference immunity against voltage surge Yes • Interference immunity against voltage surge Yes • Interference immunity against voltage surge Yes • Interference immunity agains	 Counting frequency, max. 	100 kHz
PID controller Yes Number of values outputs 4 Number of values outputs 2 Limit frequency (pulse) 100 kHz Potential separation digital inputs 500V AC for 1 minute • Potential separation digital inputs 500V AC for 1 minute • Detential separation digital outputs Yes • Potential separation digital outputs Yes • Potential separation digital outputs Yes • Detential separation digital outputs Yes • between the channels, in groups of 1 Potential separation digital outputs Yes • between the channels, in groups of 1 Potential separation digital outputs Yes • between the channels, in groups of 1 Permissible potential difference Formissible potential difference • Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity • Interference immunity on supply lines acc. to IEC Giotod-42 Yes • Interference immunity on supply lines acc. to IEC Giotod-44 Interference immunity against toltage surge • Interference immunity against toltage surge Yes • Interference immunity aga		Yes
Number of alarm inputs 4 Number of pulse outputs 2 Limit frequency (pulse) 100 kHz Potential separation digital inputs 500V AC for 1 minute • Potential separation digital inputs 500V AC for 1 minute • between the channels, ingroups of 1 Potential separation digital outputs Yes • between the channels, ingroups of 1 Permissible potential difference No • between the channels, ingroups of 1 Permissible potential difference 500 V DC between 24 V DC and 5 V DC EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity Yes • Interference immunity on supply lines acc. to IEC f1000-4-2 Yes • Interference immunity on supply lines acc. to IEC f1000-4-4 Ne • Interference immunity on supply lines acc. to IEC f1000-4-4 Yes • Interference immunity on supply lines acc. to IEC f1000-4-4 Yes • Interference immunity on supply lines acc. to IEC f1000-4-5 Yes • Interference immunity against conducted variable disturbance induced by high-frequency fields Yes • Interference immunity against conducted variable disturbance	controlled positioning	Yes
Number of pulse outputs 2 Limit frequency (pulse) 100 kHz Potential separation digital inputs 500V AC for 1 minute • Potential separation digital inputs 500V AC for 1 minute • between the channels, in groups of 1 Potential separation digital outputs Yes • between the channels, in groups of 1 Portnail separation digital outputs Yes • between the channels, in groups of 1 Parmissible potential difference 500 V DC between 24 V DC and 5 V DC between different circuits 500 V DC between 24 V DC and 5 V DC EMC Interference immunity against discharge of static electricity • Interference immunity against discharge 8 kV - Test voltage at air discharge 8 kV - Test voltage at air discharge 8 kV • Interference immunity on supply lines acc. to IEC 61000-4-4 Yes • Interference immunity against voltage surge Yes • Interference immunity against toilsparse Yes • Interference immunity against toilsparse Yes • Interference immunity against toilsparse Yes Interference im	PID controller	Yes
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Potential separation digital inputs 500V AC for 1 minute Potential separation digital inputs between the channels, in groups of Potential separation digital outputs Yes between the channels more the channels the the channel	Number of pulse outputs	2
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between the channels, in groups of Potential separation digital outputs Potential separation digital outputs Potential separation digital outputs Potential separation digital outputs between the channels No between the channels, in groups of Permissible potential difference between different circuits 500 V DC between 24 V DC and 5 V DC EMC Interference immunity against discharge of static electricity interference immunity against discharge 8 kV Test voltage at air discharge 8 kV Test voltage at air discharge 6 kV Interference immunity to cable-borne interference interference immunity on supply lines acc. to IEC fito00-4-4 interference immunity on supply lines acc. to IEC fito00-4-4 interference immunity against voltage surge interference immunity against voltage surge interference immunity against ingh-frequency radiation acc. to IEC 61000-4-2 Yes fitofference immunity against conducted variable disturbance interference immunity against ingh-frequency radiation acc. to IEC 61000-4-4 interference immunity against conducted variable disturbance interference immunity against conducted variable disturbance interference immunity against tongh-frequency radiation acc. to IEC 61000-4-4 interference immunity against conducted variable disturbance	Potential separation digital inputs	
Potential separation digital outputs Yes • Potential separation digital outputs Yes • between the channels, in groups of 1 Permissible potential difference 500 V DC between 24 V DC and 5 V DC EMC 500 V DC between 24 V DC and 5 V DC EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity Interference immunity on the static electricity • Interference immunity to against discharge 8 kV - Test voltage at air discharge 8 kV - Test voltage at contact discharge 6 kV Interference immunity to 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 • Interference immunity against not supply lines acc. to IEC 41000-4-5 • Interference immunity against conducted variable disturbance induced by high-frequency fields Yes • Interference immunity against tooltage surge Yes; Group 1 • Limit class A, for use in industrial areas Yes; Group 1 • Limit class B, for use in industrial areas Yes; When appropriate measures are used to ensure com	 Potential separation digital inputs 	500V AC for 1 minute
• Potential separation digital outputs Yes • between the channels No • between the channels, in groups of 1 Permissible potential difference 500 V DC between 24 V DC and 5 V DC EMC Interference immunity against discharge of static electricity • Interference immunity against discharge of static electricity ac. 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 • Interference immunity on signal cables acc. to IEC 61000-4-4 Yes • Interference immunity on signal cables acc. to IEC 61000-4-4 Yes • Interference immunity on supply lines acc. to IEC 61000-4-5 Yes • Interference immunity on signal cables acc. to IEC 61000-4-5 Yes • Interference immunity against tright-frequency radiation acc. to IEC 61000-4-6 Yes Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Yes Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Yes Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Yes Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Yes		1
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• 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 IEC 61000-4-4 Yes • Interference immunity on signal cables acc. to IEC 61000-4-4 Yes • Interference immunity on signal cables acc. to IEC 61000-4-4 Yes • Interference immunity against voltage surge • • Interference immunity against conducted variable disturbance Yes • Interference immunity against toilde surge Yes • Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 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 of protection Yes; Group 1 • Pegree and class of protection IP20 Standards, approvals, certificates Yes CE mark Yes	EMC	
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61000-4-4 • Interference immunity on signal cables acc. to IEC Yes 61000-4-4 Interference immunity against voltage surge • Interference immunity against voltage surge • Interference immunity against voltage surge 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 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 IP20 Standards, approvals, certificates Yes CE mark Yes	-	N .
61000-4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000-4-5 Interference immunity against conducted variable disturbance induced by high-frequency fields • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas • Limit class of protection IP degree of protection IP degree of protection CE mark CE mark Yes	61000-4-4	
• Interference immunity on 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 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 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 Yes CE mark Yes CSA approval Yes	61000-4-4	Yes
61000-4-5 Interference immunity against conducted variable disturbance induced by high-frequency fields • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 Degree and class of protection IP degree of protection IP20 Standards, approvals, certificates CE mark Yes CSA approval Yes		N .
• 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 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 Yes CE mark Yes CSA approval Yes		Yes
radiation acc. to IEC 61000-4-6Emission of radio interference acc. to EN 55 011• Limit class A, for use in industrial areasYes; Group 1• Limit class B, for use in residential areasYes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011Degree and class of protectionIP20Standards, approvals, certificatesYesCE markYesCSA approvalYes	Interference immunity against conducted variable disturbance	e induced by high-frequency fields
• 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 Yes CE mark Yes CSA approval Yes		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 IP degree of protection IP20 Standards, approvals, certificates CE mark Yes CSA approval Yes	Emission of radio interference acc. to EN 55 011	
the limits for Class B according to EN 55011 Degree and class of protection IP20 IP degree of protection IP20 Standards, approvals, certificates CE mark CE mark Yes CSA approval Yes	 Limit class A, for use in industrial areas 	Yes; Group 1
IP degree of protection IP20 Standards, approvals, certificates CE mark Yes CSA approval Yes	Limit class B, for use in residential areas	
Standards, approvals, certificates CE mark Yes CSA approval Yes	Degree and class of protection	
CE mark Yes CSA approval Yes	IP degree of protection	IP20
CSA approval Yes	Standards, approvals, certificates	
		Yes
UL approval Yes	CSA approval	Yes
	UL approval	Yes

cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	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
 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	30 0
min.	-40 °C
	-40 °C
	70 0
Air pressure acc. to IEC 60068-2-13	
Operation, min.	795 hPa
• Operation, max.	1 080 hPa
Storage/transport, min.	660 hPa
Storage/transport, max.	1 080 hPa
Altitude during operation relating to sea level	
 Installation altitude, min. 	-1 000 m
Installation altitude, max.	2 000 m
Relative humidity	
Operation, max.	95 %; no condensation
Vibrations	
 Vibration resistance during operation acc. to IEC 60068-2-6 	2 g (m/s ²) wall mounting, 1 g (m/s ²) DIN rail
Operation, tested according to IEC 60068-2-6	Yes
Shock testing	
tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Pollutant concentrations	
 SO2 at RH < 60% without condensation 	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
programming / cycle time monitoring / header	
• adjustable	Yes
Dimensions	
Width	90 mm
	100 mm
Height	_
Depth	75 mm
Weights	
Weight, approx.	370 g
last modified:	3/2/2021 🖸