SIEMENS

Data sheet

6ES7211-1AE40-0XB0

SIMATIC S7-1200, CPU 1211C, COMPACT CPU, DC/DC/DC, ONBOARD I/O: 6 DI 24V DC; 4 DO 24 V DC; 2 AI 0 - 10V DC, POWER SUPPLY: DC 20.4 - 28.8 V DC, PROGRAM/DATA MEMORY: 50 KB



General information	
Product type designation	CPU 1211C DC/DC/DC
Firmware version	V4.1
Engineering with	
 Programming package 	STEP 7 V13 SP1 or higher
Display	
with display	No
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
 permissible range, lower limit (DC) 	20.4 V
• permissible range, upper limit (DC)	28.8 V

Current consumption (rated value) 300 mA; CPU only Current consumption, max. 900 mA; CPU with all expansion modules Inrush current, max. 12 A; at 28.8 V DC Encoder supply 24 V 24 V encoder supply - 24 V L+ minus 4 V DC min. Output current 750 mA; Max. 5 V DC for CM Power loss Power loss Power loss 8 W Memory - • integrated 50 kbyte • expandable No Load memory - • integrated 50 kbyte • without battery Yes; maintenance-free • without battery Yes; / instruction for vod operations, typ. 1.7 µs; / instruction for bit operations, typ. 2.3 µs; / instruction for bit operations, typ. 1.7 µs; / instruction for bit operations, typ. 1.7 µs; / instruction for bit operations, typ. 2.3 µs; / instruction for bit operations, typ. 1.7 µs; / instruction for bit operations, typ. 1.7 µs; / instruction for bit operations, typ.	Input current	
Invah current, max. 12 A; at 28.8 V DC Encoder supply 24 V 24 V L+ minus 4 V DC min. Output current 750 mA; Max. 5 V DC for CM For backplane bus (6 V DC), max. 750 mA; Max. 5 V DC for CM Power loss. 8 W Power loss. typ. 8 W Memory 8 W Verk memory 50 kbyte • integrated 50 kbyte • kug-and able No Load memory 11 Mbyte • integrated 11 Mbyte • present Yes; maintenance-free • without battery Yes CPU processing times 0.085 µs; / instruction for bit operations, typ. 0.085 µs; / instruction for bit operations, typ. 1.7 µs; / instruction for bit operations, typ. 2.3 µs; / instruction for bit operations, typ. 1.7 µs; / instruction for bit operations, typ. 1.9 µs; / instruction for bit operations, typ	Current consumption (rated value)	300 mA; CPU only
Becoder supply 24 V encoder supply • 24 V L+ minus 4 V DC min. Output current for backplane bus (5 V DC), max. 750 mA; Max. 5 V DC for CM Power loss Power loss, typ. 8 W Memory Work memory • Integrated 50 kbyte • expandable No Load memory 1 Mbyte • Integrated 1 Mbyte • Integrated 50 kbyte • Regrated No Load memory 1 Mbyte • Integrated 1 Mbyte • Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup Yes; maintenance-free • present Yes; maintenance-free • without battery Yes CPU processing times CPU blocks Number of blocks (total) 0.085 µs; / instruction for word operations, typ. 1.7 µs; / instruction for word operations, typ. 2.3 µs; / instruction for word operations, typ. 1.7 µs; / instruction	Current consumption, max.	900 mA; CPU with all expansion modules
24 V L+ minus 4 V DC min. Output current 750 mA; Max. 5 V DC for CM Power loss Power loss, typ. Power loss, typ. 8 W Memory Vork memory • integrated 50 kbyte • expandable No Load memory • integrated • integrated 1 Mbyte • program with SIMATIC memory card • integrated 1 Mbyte • program with SIMATIC memory card Backup Ves; maintenance-free • present Yes; maintenance-free • without battery Yes CPU processing times for bit operations, typ. for bit operations, typ. 0.085 µs; / instruction for word operations, typ. 1.7 µs; / instruction for foating point arithmetic, typ. 2.3 µs; / instruction CPU-blocks 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 areae in total (incl	Inrush current, max.	12 A; at 28.8 V DC
 • 24 V L+ minus 4 V DC min. Output current for backplane bus (5 V DC), max. 750 mA; Max. 5 V DC for CM Power loss. Power loss, typ. 8 W Memory Ne Load memory integrated 50 kbyte expandable Load memory integrated 1 Mbyte Plug-in (SIMATIC Memory Card), max. Backup opresent versent versent<td>Encoder supply</td><td></td>	Encoder supply	
Output current Control of the second secon	24 V encoder supply	
for backplane bus (5 V DC), max. 750 mA; Max. 5 V DC for CM Power loss 8 W Power loss, typ. 8 W Memory integrated s0 kbyte expandable No Load memory integrated, s0 kbyte Plug-in (SIMATIC Memory Card), max. with SIMATIC Memory card), max. with SIMATIC Memory Card), max. present yes; maintenance-free vithout battery Yes CPU processing times for bit operations, typ. for bit operations, typ. for floating point arithmetic, typ. DBs, FCS, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no resolution, the entire working memory can be used OB Number of blocks (total) DBs, FCS, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no resolution, the entire working memory can be used OB Number, max. Limited only by RAM for code Data areas and their retentivity retentive data area in total (incl. times, counters, flags), max. Flag Number, max. A Whyte; Size of bit memory address area Local data per priority class, max. fb kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 28: 6 KB	• 24 V	L+ minus 4 V DC min.
Power loss Power loss, typ. 8 W Memory integrated 50 kbyte expandable No Load memory integrated 1 Mbyte Plug-in (SIMATIC Memory Card), max. With SIMATIC memory card Backup i present Ves; 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 foating point arithmetic, typ. 2.3 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 in total (incl. times, counters, flags), 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	Output current	
Power loss, typ. 8 W Memory S0 kbyte Work memory 50 kbyte • integrated 50 kbyte • expandable No Load memory • • integrated 1 Mbyte • integrated 1 Mbyte • integrated 1 Mbyte • plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup • • present Yes; maintenance-free • without battery Yes CPU processing times 0.085 µs; / instruction for bit operations, typ. 0.085 µs; / instruction for word operations, typ. 1.7 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction CPU-blocks 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 in total (incl. times, counters, flags), max. Flag • Number, max. 4 kbyte; Size of bit memory address area Local data • per priorit	for backplane bus (5 V DC), max.	750 mA; Max. 5 V DC for CM
Memory Work memory • integrated 50 kbyte • expandable No Load memory • Integrated • integrated 1 Mbyte • Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup • present • present Yes; maintenance-free • without battery Yes CPU processing times 0.085 µs; / instruction for bit operations, typ. 0.17 µs; / instruction for doperations, typ. 2.3 µs; / instruction for douting point arithmetic, typ. 2.3 µs; / instruction for word operations, typ. 1.7 µs; / instruction for douting point arithmetic, typ. 2.3 µs; / instruction CPU-blocks 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 10 kbyte retentive data area in total (incl, times, counters, flags), max. 14 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:	Power loss	
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• integrated 50 kbyte • expandable No Load memory 1 Mbyte • integrated 1 Mbyte • Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup • present • present Yes; maintenance-free • without battery Yes CPU processing times 0.085 µs; / instruction for bit operations, typ. 0.085 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction CPU-blocks 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 Imited only by RAM for code Data areas and their retentivity 10 kbyte retentive data area in total (incl. times, counters, flags), max. 10 kbyte Flag 10 kbyte; Size of bit memory address area Local data 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB	Memory	
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Load memory 1 Mbyte • integrated 1 Mbyte • Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup • present • present Yes; maintenance-free • without battery Yes CPU processing times 0.085 µs; / instruction for bit operations, typ. 0.085 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction for floating point arithmetic, typ. 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 10 kbyte retentive data area in total (incl. times, counters, flags), max. 10 kbyte 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	• integrated	50 kbyte
• integrated 1 Mbyte • Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup • present Yes; maintenance-free • without battery Yes OPU processing times 0.085 µs; / instruction for bit operations, typ. 0.085 µs; / instruction for floating point arithmetic, typ. 0.385 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction CPU-blocks 2.3 µs; / instruction Number of blocks (total) DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used OB • • Number, max. Limited only by RAM for code Data areas and their retentivity 10 kbyte retentive data area in total (incl. times, counters, flags), max. 10 kbyte 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	• expandable	No
• Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup • present Yes; maintenance-free • without battery Yes CPU processing times 0.085 µs; / instruction for bit operations, typ. 0.085 µs; / instruction for word operations, typ. 0.17 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction CPU-blocks 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 Uimited only by RAM for code Data areas and their retentivity Initian only by RAM for code Flag 4 kbyte; Size of bit memory address area Local data 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26; 6 KB	Load memory	
Backup Yes; maintenance-free • without battery Yes; maintenance-free 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. 2.3 µs; / instruction CPU-blocks 2.3 µs; / instruction Number of blocks (total) DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used OB United only by RAM for code Data areas and their retentivity 10 kbyte retentive data area in total (incl. times, counters, flags), max. 10 kbyte 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	• integrated	1 Mbyte
• present • without batteryYes; maintenance-free YesCPU processing timesfor bit operations, typ.0.085 μs; / instructionfor word operations, typ.1.7 μs; / instructionfor floating point arithmetic, typ.2.3 μs; / instructionCPU-blocksNumber 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 usedOBOBLimited only by RAM for codeData areas and their retentivityretentive data area in total (incl. times, counters, flags), max.Flag• Number, max.4 kbyte; Size of bit memory address areaLocal data16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB	 Plug-in (SIMATIC Memory Card), max. 	with SIMATIC memory card
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for word operations, typ. 1.7 μs; / instruction for floating point arithmetic, typ. 2.3 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	CPU processing times	
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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 Imited only by RAM for code Otata areas and their retentivity Imited only by RAM for code Data areas and their retentivity 10 kbyte retentive data area in total (incl. times, counters, flags), max. 10 kbyte Flag 4 kbyte; Size of bit memory address area Local data 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB	for word operations, typ.	1.7 μs; / instruction
Number of blocks (total) DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used OB • Number, max. Data areas and their retentivity Limited only by RAM for code OB • Number, max. Data areas and their retentivity 10 kbyte retentive data area in total (incl. times, counters, flags), max. 10 kbyte Flag • Number, max. • Number, max. 4 kbyte; Size of bit memory address area Local data • per priority class, max. • per priority class, max. 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB	for floating point arithmetic, typ.	2.3 μs; / instruction
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 in total (incl. times, counters, flags), max. 10 kbyte 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	CPU-blocks	
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Data areas and their retentivity retentive data area in total (incl. times, counters, flags), max. 10 kbyte 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	OB	
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flags), max. Flag • Number, max. 4 kbyte; Size of bit memory address area Local data - Per priority class, max. • per priority class, max. 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB	Data areas and their retentivity	
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Local data • per priority class, max. 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB	Flag	
• per priority class, max. 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB		4 kbyte; Size of bit memory address area
to 26: 6 KB	Local data	
Address area	• per priority class, max.	
	Address area	

Process image	
Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
Hardware configuration	
Number of modules per system, max.	3 communication modules, 1 signal board
Time of day	
Clock	
 Hardware clock (real-time clock) 	Yes
Backup time	480 h; Typical
• Deviation per day, max.	+/- 60 s/month at 25 °C
Digital inputs	
Number of digital inputs	6; Integrated
 of which inputs usable for technological 	3; HSC (High Speed Counting)
functions	
integrated channels (DI)	6
m/p-reading	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	6
Input voltage	
 Rated value (DC) 	24 V
● for signal "0"	5 V DC at 1 mA
● for signal "1"	15 VDC 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, differential: 3 @ 80 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	4
 of which high-speed outputs 	4; 100 kHz Pulse Train Output
integrated channels (DO)	4
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	
Number of analog inputs	2
integrated channels (AI)	2; 0 to 10V
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	
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
Functionality	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
Open IE communication	Yes
Web server	Yes
PROFINET IO Controller	
• Transmission rate, max.	100 Mbit/s
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)	Yes
• TCP/IP	Tes
Further protocols	Vee
• MODBUS	Yes
Communication functions	
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes
Open IE communication	
• TCP/IP	Yes
• ISO-on-TCP (RFC1006)	Yes
• UDP	
• ODF	Yes
	Yes
	Yes
Web server	
• supported	Yes

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	
Number of counters	3
Counting frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	4; With integrated DO
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
Limit frequency (pulse)	100 kHz
Potential separation	
Potential separation digital inputs	
 Potential separation digital inputs 	500V AC for 1 minute
 between the channels, in groups of 	1
Potential separation digital outputs	
 Potential separation digital outputs 	Yes
 between the channels 	No
• between the channels, in groups of	1
EMC	
Interference immunity against discharge of static electric	icity
 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	
 Interference immunity on supply lines acc. to IEC 61000-4-4 	Yes
 Interference immunity on signal cables acc. to IEC 61000-4-4 	Yes

CE mark Yes UL approval Yes cULus Yes FM approval Yes RCM (formerly C-TICK) Yes Marine approval Yes Marine approval Yes Marine approval Yes Marine approval Yes Arnbient conditions Yes Free fall 0.3 m; five times, in product package Ambient temperature during operation -20 °C • max. 60 °C • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • wertical installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -40 °C • max. 70 °C Arbient temperature during storage/transportation -40 °C • max. 70 °C Arbient temperature during storage/transport, min. 660 hPa • min. -100 to 2000 m Relative humidity -1000 to 2000 m Relative humidity -1000 to 2000 m	Interference immunity against voltage surge	
• Interference immunity against high-frequency radiation act. to IEC 61000-4-6 Yes Emission of radio interference acc. to EN 56 011 Yes; Group 1 • Limit class A, for use in industrial areas Yes; Group 1 • Limit class A, 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 Standards, approvals, certificates Yes CE mark Yes QL approval Yes CL mark Yes QL approval Yes CL mark Yes QL approval Yes RCM (formerly C-TICK) Yes Marine approval Yes Ambient conditions Yes Prop height, max. (in packaging) 0.3 m; five times, in product package Ambient temperature during operation -20 °C • indize installation, min. -20 °C • horizontal installation, max. 60 °C • orizontal installation, max. 60 °C • vertical installation, max. 50 °C • horizontal installation, max. 40 °C <	 on the supply lines acc. to IEC 61000-4-5 	Yes
Interference are, to EK 55 011 Emission of radio interference acc, to EK 55 011 E. Limit class A, for use in industrial areas Yes; Group 1 Limit class B, for use in residential areas Yes; Group 1 Degree and class of protection 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 e. IP20 Yes Standards, approvals, certificates Yes CE mark Yes U. approval Yes CUlus Yes CM (formerly C-TICK) Yes Andine approval Yes Andine approval Yes Prop height, max, (in packaging) 0.3 m; five times, in product package Anbient temperature during operation imin, -20 "C onzo tal installation, max 60 "C onzin installation, max -00	Interference immunity against conducted variable distur	bance induced by high-frequency fields
• Limit class A, 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 Yes Degree of protection acc. to EN 60529 Yes • IP20 Yes Standards, approvals, certificates Yes CE mark Yes OLL approval Yes CLUs Yes FM approval Yes RCM (formerly C-TICK) Yes Marine approval Yes Amine approval So To C • Amine installation, min. </td <td></td> <td>Yes</td>		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 acc. to EN 60529 yes • IP20 Yes Standards, approvals, certificates Yes CE mark Yes UL approval Yes cUL approval Yes dU approval Yes Marine approval Yes Marine approval Yes Marine approval Yes Orop height, max. (in packaging) 0.3 m; five times, in product package Ambient temperature during operation Improve max. 60 °C notizontal installation, min. 20 °C Norizontal installation, max. 60 °C Norizontal installation, max. 60 °C Norizontal installation, max. 70 °C min. 70 °C Amim	Emission of radio interference acc. to EN 55 011	
with the limits for Class B according to EN 55011 Degree and class of protection acc. to EN 60529 vitra second seco	 Limit class A, for use in industrial areas 	Yes; Group 1
Degree of protection acc. to EN 60529 Yes • IP20 Yes Standards, approvals, certificates Yes CE mark Yes UL approval Yes cULus Yes cULus Yes RCM (formerly C-TICK) Yes Marine approval Yes Ambient conditions Yes Free fall 0.3 m; five times, in product package Ambient conditions Yes Ambient temperature during operation -20 °C • min. -20 °C • max. 60 °C • horizontal installation, min. -20 °C • vertical installation, max. 60 °C • vertical installation, max. 60 °C • horizontal installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -20 °C • min. -20 °C • wertical installation, max. 50 °C Ambient temperature during storage/transportation -00 °C • min. -40 °C • max.	 Limit class B, for use in residential areas 	
• IP20 Yes Standards, approvals, certificates Yes CE mark Yes UL approval Yes cULus Yes CULus Yes RCM (formerly C-TICK) Yes Marine approval Yes Marine approval Yes • Marine approval Yes • Marine approval Yes • Drop height, max. (in packaging) 0.3 m; five times, in product package Ambient conditions 20 °C • min. -20 °C • max. 60 °C • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C • promissible operating storage/transportation 100 °C • max. 70 °C • for pressure acc. to IEC 60068-2-13 60 hPa • storage/transport, max. 1080 hPa • permissible operating height 1000 to 2000 m Relative humidity 95 %	Degree and class of protection	
Standards, approvals, certificates CE mark Yes UL approval Yes UL approval Yes FM approval Yes RCM (formerly C-TICK) Yes Marine approval Yes Marine approval Yes Marine approval Yes Marine approval Yes Ambient conditions Yes Free fall 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 * horizontal installation, max. 60 °C * horizontal installation, max. 60 °C * vertical installation, max. 50 °C Ambient temperature during storage/transportation * * min. -40 °C * max. 70 °C Aribert temperature during storage/transportation * * min. -100 °C * max. 660 hPa <	Degree of protection acc. to EN 60529	
CE mark Yes UL approval Yes cULus Yes FM approval Yes RCM (formerly C-TICK) Yes Marine approval Yes Marine approval Yes Marine approval Yes Marine approval Yes Arnbient conditions Yes Free fall 0.3 m; five times, in product package Ambient temperature during operation -20 °C • max. 60 °C • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • wertical installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -40 °C • max. 70 °C Arbient temperature during storage/transportation -40 °C • max. 70 °C Arbient temperature during storage/transport, min. 660 hPa • min. -100 to 2000 m Relative humidity -1000 to 2000 m Relative humidity -1000 to 2000 m	• IP20	Yes
CE mark Yes UL approval Yes cULus Yes FM approval Yes RCM (formerly C-TICK) Yes Marine approval Yes Marine approval Yes Marine approval Yes Marine approval Yes Arnbient conditions Yes Free fall 0.3 m; five times, in product package Ambient temperature during operation -20 °C • max. 60 °C • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -20 °C • wertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -40 °C • max. 70 °C • min. -100 °C • max. 1080 hPa • permissible operating height -1000 to 2000 m Relative humidity -1000 to 2000 m • permissible range (Standards, approvals, certificates	
Current Yes FM approval Yes RCM (formerly C-TICK) Yes Marine approval Yes Marine approval Yes Ambient conditions Yes Ambient conditions Yes Prefall 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, min. -20 °C • horizontal installation, min. -20 °C • vertical installation, min. -20 °C • vertical installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C min. -40 °C • max. 0 °C • max. -100 °C • max. 660 hPa • min. -60 °C • max. 660 hPa • Storage/transport, max. 1		Yes
FM approval Yes RCM (formerly C-TICK) Yes Marine approval Yes Marine approval Yes Ambient conditions Yes Ambient conditions 0.3 m; five times, in product package Ambient temperature during operation 0.3 m; five times, in product package Ambient temperature during operation -20 °C min. -20 °C nonizontal installation, min. -20 °C horizontal installation, min. -20 °C vertical installation, max. 60 °C vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C max. 50 °C Ambient temperature during storage/transportation -20 °C nonix. -20 °C emperature during storage/transportation -20 °C max. 60 °C ator pressure acc. to IEC 60068-2-13 -40 °C emperature during storage/transport, min. 660 hPa storage/transport, max. 1080 hPa epermissible operating height -1000 to 2000 m <t< td=""><td>UL approval</td><td>Yes</td></t<>	UL approval	Yes
RCM (formerly C-TICK) Yes Marine approval Yes Ambient enproval Yes Ambient conditions Image: Conditions (Conditions) Free fall 0.3 m; five times, in product package Drop height, max. (in packaging) 0.3 m; five times, in product package Ambient temperature during operation -20 °C min. -20 °C nmax. 60 °C horizontal installation, min. -20 °C horizontal installation, max. 60 °C vertical installation, max. 60 °C vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C min. -20 °C vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C max. 70 °C Air pressure acc. to IEC 60068-2-13 -40 °C vertioal installation, max. 1080 hPa storage/transport, max. 1080 hPa epermissible operating height -1000 to 2000 m Relative humidity -20 °C	cULus	Yes
Marine approval Yes Ambient conditions Free fall • Drop height, max. (in packaging) 0.3 m; five times, in product package Ambient temperature during operation -20 °C • min. -20 °C • max. 60 °C • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C • Ambient temperature during storage/transportation -40 °C • max. 70 °C • max. 70 °C Ambient temperature during storage/transportation -40 °C • max. 1080 hPa • Storage/transport, max. 1080 hPa • permissible operating height -1000 to 2000 m Relative humidity -29 °C • permissible range (without condensation) at 25 °C	FM approval	Yes
Marine approval Yes Anbient conditions Free fall • Drop height, max. (in packaging) 0.3 m; five times, in product package Ambient temperature during operation -20 °C • min. • 20 °C -20 °C • max. 60 °C • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. • non. • colo °C -20 °C • max. 70 °C • max. 70 °C • max. 1080 hPa • storage/transport, max. 1080 hPa • permissible operating height 1000 to 2000 m Relative humidity 95 %	RCM (formerly C-TICK)	Yes
Ambient conditions Free fall • Drop height, max. (in packaging) 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 • horizontal installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -20 °C • max. -20 °C • min. -20 °C • max. -20 °C • min. -20 °C • max. 70 °C Air pressure acc. to IEC 60068-2-13 -40 °C • Storage/transport, max. 1080 hPa • permissible operating height -1000 to 2000 m Relative humidity -ge % -20 %C	Marine approval	
Free fall • Drop height, max. (in packaging) 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, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -20 °C • max. 50 °C Ambient temperature during storage/transportation -20 °C • max. 70 °C Ambient temperature during storage/transportation	Marine approval	Yes
Prop height, max. (in packaging) 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 • horizontal installation, max. 60 °C • vertical installation, max. 70 °C • vertical installation, max. 40 °C • max. 70 °C Ambient temperature during storage/transportation 70 °C • max. 70 °C Air pressure acc. to IEC 60068-2-13 100 °C • Storage/transport, max. 660 hPa • Storage/transport, max. 1080 hPa • permissible operating height 1000 to 2000 m Relative humidity - • permissible range (without condensation) at 25 °C 95 % <td>Ambient conditions</td> <td></td>	Ambient conditions	
Ambient temperature during operation • min. -20 °C • max. 60 °C • horizontal installation, min. -20 °C • horizontal installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 60 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -40 °C • min. -40 °C • max. 70 °C Air pressure acc. to IEC 60068-2-13 - • Storage/transport, min. 660 hPa • Storage/transport, max. 1 080 hPa • permissible operating height -1000 to 2000 m Relative humidity - • permissible range (without condensation) at 25 °C 95 %	Free fall	
• min20 °C• max.60 °C• horizontal installation, min20 °C• horizontal installation, max.60 °C• vertical installation, min20 °C• vertical installation, max.50 °CAmbient temperature during storage/transportation-40 °C• min40 °C• max.70 °CAri pressure acc. to IEC 60068-2-13660 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 mRelative humidity95 %	 Drop height, max. (in packaging) 	0.3 m; five times, in product package
InitialHorizontal• max.60 °C• horizontal installation, min20 °C• horizontal installation, max.60 °C• vertical installation, min20 °C• vertical installation, max.50 °CAmbient temperature during storage/transportation-20 °C• min40 °C• max.70 °CAir pressure acc. to IEC 60068-2-13660 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1080 hPa• permissible operating height1000 to 2000 mRelative humidity-1000 to 2000 m	Ambient temperature during operation	
• horizontal installation, min20 °C• horizontal installation, max.60 °C• vertical installation, min20 °C• vertical installation, max.50 °CAmbient temperature during storage/transportation50 °C• min40 °C• max.70 °CArt pressure acc. to IEC 60068-2-13660 hPa• Storage/transport, max.1080 hPa• Storage/transport, max.1000 to 2000 m• permissible operating height1000 to 2000 mRelative humidity95 %	• min.	-20 °C
• horizontal installation, max.60 °C• vertical installation, min20 °C• vertical installation, max.50 °CAmbient temperature during storage/transportation-40 °C• min40 °C• max.70 °CArr pressure acc. to IEC 60068-2-13660 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 mRelative humidity• permissible range (without condensation) at 25 °C95 %	• max.	60 °C
• vertical installation, min20 °C• vertical installation, max.50 °CAmbient temperature during storage/transportation-40 °C• min40 °C• max.70 °CAir pressure acc. to IEC 60068-2-13660 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 mRelative humidity• permissible range (without condensation) at 25 °C	 horizontal installation, min. 	-20 °C
• vertical installation, max.50 °CAmbient temperature during storage/transportation-40 °C• min40 °C• max.70 °CAir pressure acc. to IEC 60068-2-13660 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1080 hPa• permissible operating height-1000 to 2000 mRelative humidity• permissible range (without condensation) at 25 °C	 horizontal installation, max. 	60 °C
Ambient temperature during storage/transportation• min40 °C• max.70 °CAir pressure acc. to IEC 60068-2-13660 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 mRelative humidity• permissible range (without condensation) at 25 °C	 vertical installation, min. 	-20 °C
• min40 °C• max.70 °CAir pressure acc. to IEC 60068-2-13660 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1080 hPa• permissible operating height-1000 to 2000 mRelative humidity95 %• permissible range (without condensation) at 25 °C95 %	 vertical installation, max. 	50 °C
 max. max. for °C Air pressure acc. to IEC 60068-2-13 Storage/transport, min. Storage/transport, max. permissible operating height 1080 hPa 1000 to 2000 m Relative humidity • permissible range (without condensation) at 25 °C 	Ambient temperature during storage/transportation	
Air pressure acc. to IEC 60068-2-13 • Storage/transport, min. 660 hPa • Storage/transport, max. 1 080 hPa • permissible operating height -1000 to 2000 m Relative humidity • permissible range (without condensation) at 25 °C	• min.	-40 °C
• Storage/transport, min.660 hPa• Storage/transport, max.1 080 hPa• permissible operating height-1000 to 2000 mRelative humidity• permissible range (without condensation) at 25 °C	● max.	70 °C
 Storage/transport, max. permissible operating height 1 080 hPa -1000 to 2000 m Relative humidity permissible range (without condensation) at 25 °C 		
 permissible operating height Relative humidity permissible range (without condensation) at 25 °C 95 % 	• Storage/transport, min.	660 hPa
 permissible operating height Relative humidity permissible range (without condensation) at 25 °C 95 % 	 Storage/transport, max. 	1 080 hPa
• permissible range (without condensation) at 25 95 % °C 95 %		-1000 to 2000 m
 permissible range (without condensation) at 25 °C 		
	• permissible range (without condensation) at 25	95 %
	Vibrations	

Vibrations	2G wall mounting, 1G DIN rail
	-
 Operation, tested according to IEC 60068-2-6 	Yes
Shock test	
 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
Extended ambient conditions	
Pollutant concentrations	
— SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
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.	370 g
last modified:	05.02.2016