SIEMENS

Data sheet

6AG1214-1AG40-5XB0

SIPLUS S7-1200 CPU 1214C DC/DC/DC -25...+60 °C with conformal coating based on 6ES7214-1AG40-0XB0 signal board usable. . compact CPU, DC/DC/DC, onboard I/O: "14 DI 24 V DC; 10 DO 24 V DC;" 2 AI 0-10 V DC, Power supply: DC 20.4-28.8V DC, Program/data memory 75 KB



General information	
Product type designation	CPU 1214C DC/DC/DC
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
Input current	
Current consumption (rated value)	500 mA; CPU only
Current consumption, max.	1 500 mA; CPU with all expansion modules
Inrush current, max.	12 A; at 28.8 V DC
Output current	
for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM

Encoder supply	
24 V encoder supply	
• 24 V	L+ minus 4 V DC min.
Power loss	
Power loss, typ.	12 W
lemory	
Work memory	
• integrated	100 kbyte
• expandable	No
Load memory	
• integrated	4 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; / instruction
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	
• 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.	8 kbyte; Size of bit memory address area
Local data	
• per priority class, max.	16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB
ddress area	
Process image	
 Inputs, adjustable 	1 kbyte
• Outputs, adjustable	1 kbyte
lardware configuration	
Number of modules per system, max.	

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	14; Integrated
 of which inputs usable for technological functions 	6; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	14
Input voltage	
 Rated value (DC) 	24 V
● for signal "0"	5 V DC at 1 mA
● for signal "1"	15 V DC at 2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
for interrupt inputs	
— parameterizable	Yes
for technological functions	
— parameterizable	Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz
Cable length	
 shielded, max. 	500 m; 50 m for technological functions
• unshielded, max.	300 m; For technological functions: No
Digital outputs	
Number of digital outputs	10
 of which high-speed outputs 	4; 100 kHz Pulse Train Output
Limitation of inductive shutdown voltage to	L+ (-48 V)
Switching capacity of the outputs	
 with resistive load, max. 	0.5 A
● on lamp load, max.	5 W
Output voltage	
● for signal "0", max.	0.1 V; with 10 kOhm load
● for signal "1", min.	20 V
Output current	

 for signal "1" rated value 	0.5 A
 for signal "0" residual current, max. 	0.1 mA
Output delay with resistive load	
• "0" to "1", max.	1 µs
● "1" to "0", max.	5 µs
Switching frequency	
 of the pulse outputs, with resistive load, max. 	100 kHz
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Analog inputs Number of analog inputs	2
Input ranges	2
Voltage	Yes
Input ranges (rated values), voltages	
	Yes
• 0 to +10 V	
Input resistance (0 to 10 V)	≥100k ohms
Cable length	400 m to ista d and a bial da d
 shielded, max. 	100 m; twisted and shielded
Analog outputs	
Analog outputs Number of analog outputs	0
Number of analog outputs	0
	0
Number of analog outputs Analog value generation for the inputs	0 10 bit
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel	
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign),	
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.	10 bit
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel)	10 bit Yes
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable	10 bit Yes
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encoder	10 bit Yes
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor	10 bit Yes 625 μs
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor 1. Interface	10 bit Yes 625 μs Yes
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type	10 bit Yes 625 μs Yes PROFINET
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type Physics	10 bit Yes 625 μs Yes PROFINET Ethernet
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type Physics Isolated	10 bit Yes 625 μs Yes PROFINET Ethernet Yes
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type Physics Isolated automatic detection of transmission rate	10 bit Yes 625 μs Yes PROFINET Ethernet Yes Yes
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor Interface type Physics Isolated automatic detection of transmission rate Autonegotiation	10 bit Yes 625 μs Yes PROFINET Ethernet Yes Yes Yes
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type Physics Isolated automatic detection of transmission rate Autocrossing	10 bit Yes 625 μs Yes PROFINET Ethernet Yes Yes
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type Physics Isolated automatic detection of transmission rate Autonegotiation Autocrossing Protocols	10 bit Yes 625 μs Yes PROFINET Ethernet Yes Yes Yes Yes
Number of analog outputs Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor 1. Interface Interface type Physics Isolated automatic detection of transmission rate Autocrossing	10 bit Yes 625 µs Yes PROFINET Ethernet Yes Yes 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)	
• 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	
Number of counters	6
Counting frequency (counter) max.	100 kHz
Frequency measurement	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	4; With integrated 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	
 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	city	
 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	
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 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 	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 Yes Ambient conditions Free fall Fill height, max. O 3m; five times, in product package Ambient temperature during operation O "C, = Tmax; Tmax > 455 °C number of simultaneously switch-on digital inputs, 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position adjacent points) with horizontal mounting position Ambient temperature during storage/transportation O "C Tmax. Tomin. Ado "C nmax. Tomin. Installation altitude above sea level, max. Sto00 m TmimTmax at 1140 hPa795 hPa (-1 000 m + 2000 m.) // TmimTmax at 1140 hPa795 hPa (-1 000 m + 2000 m.) // TmimTmax at 1140 hPa795 hPa (-1 000 m + 2000 m.) // TmimTmax at 1140 hPa	Degree of protection acc. to EN 60529	
Free fail Fail height, max. C3 m; five times, in product package Ambient temperature during operation -40 °C; = Tmin; Startup @ -25 °C 60 °C; = Tmax; Tmax > +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position Ambient temperature during storage/transportation	• IP20	Yes
Free fail 0.3 m; five times, in product package Ambient temperature during operation -40 °C; = Tmin; Startup @ -25 °C • min. -40 °C; = Tmin; Startup @ -25 °C • max. 60 °C; = Tmax; Tmax > 455 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position Ambient temperature during storage/transportation -40 °C • min. -40 °C • max. 70 °C Attitude during operation relating to sea level 5 000 m • Installation altitude above sea level, max. 5 000 m • Installation altitude above sea level, max. 5 000 m • With condensation, tested in accordance with IEC 60068-2-38, max. 5 000 m • With condensation, tested in accordance with IEC 60068-2-6 100 %; RH incl. condensation/frost (no commissioning under condensation of fost (so commissioning under condensation conditions) • Ubration resistance during operation acc. to IEC 60068-2-6 Yes • Operation, tested according to IEC 60068-2-7 Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms Resistance Yes Colarits and lubricants Yes • to biologically active substances according to EC 60068-2-3 Yes; Class 322 mold, fungus and dry rot spores (with the	Ambient conditions	
• Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation -40 °C; = Tmin; Startup @ -25 °C • max. 60 °C; = Tmax; Tmax > 455 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position Ambient temperature during storage/transportation -40 °C • min. -40 °C • max. 70 °C Altitude during operation relating to sea level		
Ambient temperature during operation -40 °C; = Tmin; Startup @ -25 °C 60 °C; = Tmax, Tmax > +55 °C number of simultaneously subted-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position Ambient temperature during storage/transportation -40 °C; • min. -40 °C • max. -70 °C Attude during operation relating to sea level -40 °C; • Installation altitude above sea level, max. -70 °C • Ambient air temperature-barometric pressureatifue -10 K at 75 Ph = 658 hPa + 540 hPa (+3 500 m + 2 000 m) // • Ambient air temperature-barometric pressureatifue -10 K at 75 Ph = 658 hPa + 540 hPa (+3 500 m + 5 000 m) • Relative humidity -00 °C • With condensation, tested in accordance with IEC 60068-2-38, max. 100 %; RH incl. condensation/fost (no commissioning under condensation conditions) • Vibration resistance during operation acc. to IEC 60068-2-6 Yes • Vibration resistance during operation acc. to IEC 60068-2-7 Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms Resistance - Yes Coolarts and lubricants Yes Use in stationary industrial systems - - to biologically active substances according to EN 60721-3-3		0.3 m; five times, in product package
• min. -40 °C; = Tmin; Startup @25 °C • max. 60 °C; = Tmax; Tmax > +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position Ambient temperature during storage/transportation -40 °C • min. -70 °C Attitude during operation relating to sea level 5000 m • Installation altitude above sea level, max. 5000 m • Ambient air temperature-barometric pressure-altitude 5000 m • Mitude during operation relating to sea level, max. 5000 m • With condensation, tested in accordance with IEC 60068-2-38, max. 70 °C • With condensation, tested in accordance with IEC 60068-2-6 100 %; RH incl. condensation/fost (no commissioning under condensation conditions) • Vibration resistance during operation acc. to IEC 60068-2-6 2 g (m/s ³) wall mounting, 1 g (m/s ³) DIN rail • Vibration resistance during to IEC 60068-2-27 Yes Shock testing - • tested according to IEC 60068-2-27 Yes Coolants and lubricants Yes - Resistant to commercially available coolants and lubricants Yes - No 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	-	
• max.60 °C; = Tmax; Tmax > 55 °C number of simultaneously siviched-on digital inputs 7, digital outputs 5, analog inputs 2 (no ajacent points) with horizontal mounting positionAmbient temperature during storage/transportation40 °C 70 °CAmma60 °C; = Tmax; Tmax > 140 °C 70 °CAltitude during operation relating to sea level70 °CAttitude during operation relating to sea level, max.600 °C 70 °CAmbient air temperature-barometric pressure- altitude70 °COr Dial70 °CAttitude Schwarz70 °CAmbient air temperature-barometric pressure- altitude70 °CWith condensation, tested in accordance with IEC 60068-2-8, max.700 °COtheration relating operation acc. to IEC 60068-2-620 (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall wall wall wall wall wall 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall wall wall wall wall wall wall 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall wall wall wall wall wall 2 (g (m/s²) wall mounting, 1 g (m/s²) DIN rail 2 (g (m/s²) wall wall wall wall wall wall wall 2 (g (m/s²) wall wall wall wall wall wall 2 (g (m/s²) wall wall wall wall wall wall wall 2 (g (m/s²) wall wall wall wall wall wall wall wal		-40 °C: = Tmin: Startup @ -25 °C
Ambient temperature during storage/transportationAmbient temperature during storage/transportation• min40 °C• max.70 °CAltitude during operation relating to sea level• Installation altitude above sea level, max.5000 m• Ambient air temperature-barometric pressure- altitudeTmin (Tmax 1 140 hPa 735 hPa (-1000 m + 2000 m) // Tmin (Tmax - 10 K) at 785 hPa 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 10 K) at 785 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m + 350 m) m) // Tmin (Tmax - 20 K) at 658 hPa 658 hPa (+2 000 m) // Tmin (Tmax + 10 K) m) // Tmin (Tmax + 10 K) hPa 658 hPa (+2 000 m) // Tmin (Tmax + 10 K) hPa (+2 000 m) /		· · · ·
 min. 40 °C 70 °C Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure altitude Ambient air temperature-barometric pressure altitude Mine and the above sea level, max. Ambient air temperature-barometric pressure altitude Tmin (Tmax + 11 40 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax + 10 K) at 795 hPa (-2 000 m +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) +3 500 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 658 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 668 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 668 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 668 hPa (-2 000 m) // Tmin (Tmax + 20 K) at 668 hPa (-2 000 m) // t	- mux.	switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no
max.70 °CAlttude during operation relating to sea level5000 mInstallation altitude above sea level, max.5000 mAmbient air temperature-barometric pressure altitudeTmin Tmax at 1140 hPa 795 hPa (1000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa (658 hPa (+2 000 m +3 500 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 +53 000 m)Relative humidity00%, RH incl. condensation/frost (no commissioning under condensation conditions)Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s³) wall mounting, 1 g (m/s³) DIN rail• Vibration resistance during operation acc. to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes• Coolants and lubricantsYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msResistanceYes• coolants and lubricantsYes• coolants and lubricantsYes• to biologically active substances according to EN 60721-3-3Yes: Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 383 on request• to k00721-3-3Yes; Class 362 (RH < 75 %) incl. salt spray acc. to EN 60068-2-6	Ambient temperature during storage/transportation	
Altitude 5 000 m • Installation altitude above sea level, max. 5 000 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 +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax -20 K) at 600 far ana); Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request - to hemically active substances according to EN 60721-3-3 - to hemically active substances according to EN 60721-3-3 - to mechanically active substances according to EN	• min.	-40 °C
• Installation altitude above sea level, max.5 000 m• Ambient air temperature-barometric pressure- altitudeTmin 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 +3 000 m) Relative humidity 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Vibrations 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Vibrations 2 g (m/s ³) wall mounting, 1 g (m/s ²) DIN rail• Vibration resistance during operation acc. to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes Shock testing Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms Resistance Yes; IEC 600lants and lubricants- Resistant to commercially available colants and lubricantsYes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request- to biologically active substances according to EN 60721-3-3Yes; Class 3S4 incl. sand, dust, * 2 (severity degree 3); * Ye; Class 3S4 incl. sand, dust, * 2 (severity degree 3); * Yes; Class 6B2 mold and fungal spores (excluding fauna); Class	• max.	70 °C
Indication in indice does of each of eq. (not)• Ambient air temperature-barometric pressure- altitudeTmin (Tmax + 11 40 hPa 795 hPa (-1000 m + 2000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (-2000 m + 3500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m + 5 000 m) Relative humidity 100 %; RH incl. condensation/frost (no commissioning under condensation conditions)• With condensation, tested in accordance with IEC 60068-2-38, max.100 %; RH incl. condensation/frost (no commissioning under condensation conditions)• Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes• tested according to IEC 60068-2-6Yes• tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msResistanceVes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• to biologically active substances according to EN 60721-3-3Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B2 on request Yes; Class 3S4 incl. sand, dust, * Yes; Class 6B2 mold and fungal spores (excluding fauna); Class	Altitude during operation relating to sea level	
altitudeTmin (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 +3 500 m)// Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)Relative humidity100 %; RH incl. condensation/frost (no commissioning under condensation conditions)Vibration200 %; RH incl. condensation/frost (no commissioning under condensation conditions)Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s ³) wall mounting. 1 g (m/s ³) DIN rail• Vibration resistance during to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes: IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msResistanceYes: IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• Coolants and lubricantsYes: Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 382 mold, fungus and dry rot spores (with the exception of fauna); Class 383 on request• to inchanically active substances according to EN 60721-3-3Yes: Class 35	 Installation altitude above sea level, max. 	5 000 m
• 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 • Operation, tested according to IEC 60068-2-6 • Operation, tested according to IEC 60068-2-6 • Ves2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Coperation, tested according to IEC 60068-2-6 • Operation, tested according to IEC 60068-2-27Yes• tested according to IEC 60068-2-27 • Colants and lubricantsYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• ResistanceVes• Coolants and lubricantsYes• To biologically active substances according to EN 60721-3-3Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request• to chemically active substances according to EN 60721-3-3Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); * Yes; Class 3S4 incl. sand, dust, *Use on ships/at sea — to biologically active substances according to EN 60721-3-3Yes; Class 6B2 mold and fungal spores (excluding fauna); Class		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
IEC 60068-2-38, max.condensation conditions)Vibrations• Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-7Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• Teosiatanto commercially available coolants and lubricantsYes;• Teosiatant to commercially available coolants and lubricantsYes• to biologically active substances according to EN 60721-3-3Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request• to chemically active substances according to EN 60721-3-3Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *• to mechanically active substances according to EN 60721-3-3Yes; Class 3S4 incl. sand, dust, *• to mechanically active substances according to EN 60721-3-3Yes;	Relative humidity	
Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6YesShock testingYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msResistanceYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msResistanceYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msOcolants and lubricantsYes- Resistant to commercially available coolants and lubricantsYesUse in stationary industrial systemsYes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request- to biologically active substances according to EN 60721-3-3Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *- to mechanically active substances according to EN 60721-3-3Yes; Class 3B4 incl. sand, dust, *- to biologically active substances according to EN 60721-3-3Yes; Class 3B4 incl. sand, dust, *Use on ships/at sea- to biologically active substances according to EN 60721-3-3Use on ships/at sea- to biologically active substances according to EN 60021-3-3- to biologically active substances according according to EN 60721-3-3Yes; Class 6B2 mold and fungal spores (excluding fauna); Class- to biologically active substances according according to EN 60721-3-3Yes; Class 6B2 mold and fungal spores (excluding f		
IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6YesShock testingYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msResistanceCoolants and lubricants- Resistant to commercially available coolants and lubricantsYesUse in stationary industrial systemsYes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request- to biologically active substances according to EN 60721-3-3Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	Vibrations	
Shock testing 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 Resistant to commercially available coolants and lubricants Yes 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 mechanically active substances according to EN 60721-3-3 Yes; Class 3S4 incl. sand, dust, * to mechanically active substances according to EN 60721-3-3 Yes; Class 3S4 incl. sand, dust, * to biologically active substances according to EN 60721-3-3 Yes; Class 3S4 incl. sand, dust, * to biologically active substances according to EN 60721-3-3 Yes; Class 6B2 mold and fungal spores (excluding fauna); Class		2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
• tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msResistanceCoolants and lubricantsYes- Resistant to commercially available coolants and lubricantsYesUse in stationary industrial systemsYes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request- to biologically active substances according to EN 60721-3-3Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	 Operation, tested according to IEC 60068-2-6 	Yes
ResistanceCoolants and lubricants- Resistant to commercially available coolants and lubricantsYesUse in stationary industrial systems- to biologically active substances according to EN 60721-3-3Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request- to chemically active substances according to EN 60721-3-3Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *- to mechanically active substances according to EN 60721-3-3Yes; Class 3S4 incl. sand, dust, *Use on ships/at seaYes; Class 6B2 mold and fungal spores (excluding fauna); Class	Shock testing	
Coolants and lubricants— Resistant to commercially available coolants and lubricantsYesUse in stationary industrial systems—— to biologically active substances according to EN 60721-3-3Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request— to chemically active substances according to EN 60721-3-3Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *— to mechanically active substances according to EN 60721-3-3Yes; Class 3S4 incl. sand, dust, *Use on ships/at sea—— to biologically active substances according to EN 60721-3-3Yes; Class 6B2 mold and fungal spores (excluding fauna); Class	 tested according to IEC 60068-2-27 	
— Resistant to commercially available coolants and lubricantsYesUse in stationary industrial systems—— to biologically active substances according to EN 60721-3-3Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request— to chemically active substances according to EN 60721-3-3Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *— to mechanically active substances according to EN 60721-3-3Yes; Class 3S4 incl. sand, dust, *Use on ships/at seaYes; Class 6B2 mold and fungal spores (excluding fauna); Class	Resistance	
coolants and lubricants 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); *	Coolants and lubricants	
— to biologically active substances according to EN 60721-3-3Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request— to chemically active substances according to EN 60721-3-3Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *— to mechanically active substances according to EN 60721-3-3Yes; Class 3S4 incl. sand, dust, *Use on ships/at sea—— to biologically active substances according to EN 60721-3-3Yes; Class 6B2 mold and fungal spores (excluding fauna); Class	-	Yes
to EN 60721-3-3exception of fauna); Class 3B3 on request— to chemically active substances according to EN 60721-3-3Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *— to mechanically active substances according to EN 60721-3-3Yes; Class 3S4 incl. sand, dust, *Use on ships/at sea	Use in stationary industrial systems	
to EN 60721-3-3 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		
according to EN 60721-3-3 Use on ships/at sea — to biologically active substances according Yes; Class 6B2 mold and fungal spores (excluding fauna); Class		
- to biologically active substances according Yes; Class 6B2 mold and fungal spores (excluding fauna); Class	-	Yes; Class 3S4 incl. sand, dust, *
	Use on ships/at sea	
	— to biologically active substances according to EN 60721-3-6	

 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances 	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); * Yes; Class 6S3 incl. sand, dust; *
according to EN 60721-3-6	,,
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	110 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	415 g
last modified:	07/29/2018