Data sheet 6AG1215-1BG40-5XB0

SIPLUS S7-1200 CPU 1215C AC/DC/relay -40...+60°C with conformal coating based on 6ES7215-1BG40-0XB0 . compact CPU, AC/DC/relay, 2 PROFINET "ports onboard I/O: ""14 DI 24 V" "DC; 10 DO relay 2 A; 2 AI 0-10" V DC, 2 AO 0-20 mA DC Power supply: AC 85-264 V AC @ 47-63 Hz, Program/data memory 125 KB

General information	
Product type designation	CPU 1215C AC/DC/relay
Firmware version	V4.1
Engineering with	
 Programming package 	STEP 7 V13 SP1 or higher
Supply voltage	
Rated value (AC)	
• 120 V AC	Yes
• 230 V AC	Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	265 V
Line frequency	
 permissible range, lower limit 	47 Hz
 permissible range, upper limit 	63 Hz
Input current	
Current consumption (rated value)	100 mA at 120 V AC; 50 mA at 240 V AC
Current consumption, max.	300 mA at 120 V AC; 150 mA at 240 V AC
Inrush current, max.	20 A; at 264 V
Encoder supply	
24 V encoder supply	
• 24 V	20.4 to 28.8V
Power loss	
Power loss, typ.	12 W
Memory	
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.	2.5 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.	8 kbyte; Size of bit memory address area
Address area	
Process image	
Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
Hardware configuration	
Number of modules per system, max.	3 comm. modules, 1 signal board, 8 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	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	Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms,
	selectable in groups of four
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
for interrupt inputs	
— parameterizable	Yes
for technological functions	
— parameterizable	Yes; Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz
Cable length	W 0 41 00 141 12
shielded, max.	500 m; 50 m for technological functions
• unshielded, max.	300 m; for technological functions: No
Digital outputs	ooo iii, ior too iiroog.oo. runosono rito
Number of digital outputs	10; Relays
Switching capacity of the outputs	10, Notays
with resistive load, max.	2 A
• on lamp load, max.	30 W with DC, 200 W with AC
Output delay with resistive load	55 T. THAT 50, 200 TT THAT 110
• "0" to "1", max.	10 ms; max.
• "1" to "0", max.	10 ms; max.
Switching frequency	
of the pulse outputs, with resistive load, max.	1 Hz
Relay outputs	
Number of relay outputs	10
Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100 000
Cable length	
shielded, max.	500 m
• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	
• Voltage	Yes
- voltago	

Input ranges (rated values), voltages	v
• 0 to +10 V	Yes
— Input resistance (0 to 10 V)	≥100k ohms
Cable length	400 4 14 4 4 14 14 1
• shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	2
Output ranges, current	
• 0 to 20 mA	Yes
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
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
 Resolution with overrange (bit including sign), max. 	10 bit
Encoder	
Connectable encoders	
2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Interface types	103
• RJ 45 (Ethernet)	Yes
Protocols	103
PROFINET IO Controller	Yes
T NOT INET TO CONTIONE	163
	Ves: Also simultaneously with IO-Device functionality
PROFINET IO Device	Yes; Also simultaneously with IO-Device functionality
PROFINET IO Device PROFINET IO Controller	
PROFINET IO Device PROFINET IO Controller Transmission rate, max.	Yes; Also simultaneously with IO-Device functionality 100 Mbit/s
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services	100 Mbit/s
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max.	
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services Number of connectable IO Devices, max. PROFINET IO Device	100 Mbit/s
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services Number of connectable IO Devices, max. PROFINET IO Device Services	100 Mbit/s 16
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services Number of connectable IO Devices, max. PROFINET IO Device Services Services Services	100 Mbit/s 16 Yes
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services Number of connectable IO Devices, max. PROFINET IO Device Services	100 Mbit/s 16
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max.	100 Mbit/s 16 Yes
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. Protocols	100 Mbit/s 16 Yes 2
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO	100 Mbit/s 16 Yes 2
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS	100 Mbit/s 16 Yes 2 Yes Yes Yes; CM 1243-5 required
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface	100 Mbit/s 16 Yes 2
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet)	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes
 ◆ PROFINET IO Device PROFINET IO Controller ◆ Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) ◆ TCP/IP 	100 Mbit/s 16 Yes 2 Yes Yes Yes; CM 1243-5 required
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) TCP/IP Open IE communication	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes Yes
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) TCP/IP Open IE communication TCP/IP	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes Yes
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006)	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes Yes Yes
 ◆ PROFINET IO Device PROFINET IO Controller ◆ Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) ◆ TCP/IP Open IE communication ◆ TCP/IP ◆ ISO-on-TCP (RFC1006) ◆ UDP 	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes Yes
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. 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	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. 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 supported	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes
PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. 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 supported User-defined websites	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes
 PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services Number of connectable IO Devices, max. PROFINET IO Device Services Shared device Number of IO Controllers with shared device, max. 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 supported User-defined websites Further protocols 	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Yes Yes
 PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. 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 supported User-defined websites Further protocols MODBUS 	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes
 ◆ PROFINET IO Device PROFINET IO Controller ◆ Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. 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 ◆ supported ◆ User-defined websites Further protocols ◆ MODBUS Communication functions 	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Yes Yes
 PROFINET IO Device PROFINET IO Controller Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max. 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 supported User-defined websites Further protocols MODBUS 	100 Mbit/s 16 Yes 2 Yes Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Yes Yes

as selver! as client ves as client Ves Number of connections overall Forcing Ves Forcing Fo		
Number of positioning axes via pulse-direction interface Potential separation digital inputs		
Overall 16: dynamically Test commissioning functions Status/control variable		Yes
Status control variable Yes Inputs/outputs. memory bits, DBs, distributed I/Os, timers, counters	Number of connections	
Status/control variable Status/control variable Status/control variable Ves inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Forcing Forcing Forcing Forcing Forcing Forcing Forcing Forcing Possposite butter Possposite Number of configurable Traces Number of configurable Traces Counter Number of counters Counting frequency, max. 100 kHz Frequency measurement Ves controlled positioning axes, max. Number of positioning axes via pulse-direction interface Picto controller Picto controller Picto controller Postential separation digital inputs Potential separation digital inputs Potential separation digital inputs Potential separation digital outputs Pote	overall	16; dynamically
Status/control variable Variables Forcing Fo	Test commissioning functions	
Forcing Forcing Yes Diagnostic buffer • Forcing Yes Traces • Powmber of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of counters • Counting frequency, max. • Traces • Number of positioning axes, max. • Number of positioning axes, max. • Number of positioning axes wa pulse-direction interface PIC controller • Potential separation digital inputs • Potential separation digital inputs • Potential separation digital inputs • Potential separation digital outputs • Potential separation digital outputs • Detween the channels, in groups of • Potential separation digital cutputs • Detween the channels, in groups of • Detween the channels, ing	Status/control	
● Forcing ● Present P	 Status/control variable 	Yes
Posent Ves Diagnostic buffer present Yes Traces Number of configurable Traces 2; Up to 512 KB of data per trace are possible Integrated Functions Counter Number of counters Counting frequency, max. 100 kHz Prequency measurement Yes controlled positioning axes, max. Number of position-controlled positioning axes, max. Number of positioning axes via pulse-direction interface PIC controller PiC controller PiC controller Positioning Average Ves Number of positioning axes via pulse-direction interface PIC controller PiC controller Positioning axes via pulse-direction interface via pulse-direction interface via pulse-direction via pul	 Variables 	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Diagnostic buffer • present Traces • Number of configurable Traces • Number of configurable Traces • Number of counters • Counter • Number of counters • Counting frequency, max. Frequency measurement controlled positioning axes, max. Number of position-controlled positioning axes, max. 8 Number of position-controlled positioning axes, max. 9 Number of position-controlled positioning axes, max. 9 Number of position-c	Forcing	
Traces Number of configurable Traces Number of counters Counter Number of counters Counting frequency, max. Frequency measurement controlled positioning axes, max. Number of position-controlled positioning axes, max. Number of positioning axes via pulse-direction interface PID controller Yes Number of positioning axes via pulse-direction interface PID controller Yes Number of positioning axes via pulse-direction interface PID controller Yes Number of positioning axes via pulse-direction interface PID controller Yes Number of positioning axes via pulse-direction interface PID controller Yes Number of positioning axes via pulse-direction interface PID controller Yes No Potential separation digital inputs Potential separation digital inputs Potential separation digital outputs Potential separation digita	Forcing	Yes
I Traces • Number of configurable Traces Integrated Functions Counter • Number of counters • Counting frequency, max. Frequency measurement controlled positioning axes, max. Number of position-controlled positioning axes, max. Number of position-controlled positioning axes, max. Number of positioning axes via pulse-direction interface PDE controlled Positioning axes via pulse-direction interface PDE controlled positioning axes via pulse-direction interface PDE controller Number of alarm inputs • Potential separation Potential separation digital inputs • Potential separation digital inputs • Potential separation digital inputs • Potential separation digital outputs • Relays • R	Diagnostic buffer	
Number of configurable Traces Country Number of counters Country Number of counters Country Number of country Number of positioning Average of Static Picture Static Selectricity Number of positioning axes via pulse-direction interface PID controlled Pyes Number of alarm inputs 4 Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Potential separation digital outputs Potential separation d	• present	Yes
Integrated Functions	Traces	
Counter Number of counters Controlled positioning access max. Frequency measurement Controlled positioning access max. Number of positioning access via pulse-direction interface PID controller Ves Number of alarm inputs Potential separation digital outputs Potential separati	Number of configurable Traces	2; Up to 512 KB of data per trace are possible
Counter Number of counters Controlled positioning access max. Frequency measurement Controlled positioning access max. Number of positioning access via pulse-direction interface PID controller Ves Number of alarm inputs Potential separation digital outputs Potential separati	_	
Number of counters Counting frequency, max. Interference immunity against discharge of static electricity Interference immunity against discharge Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity against voltage surge Interference immunity against onducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against lond-4		
Counting frequency, max. Frequency measurement Controlled positioning Number of position-controlled positioning axes, max. Number of position-controlled positioning axes, max. Number of positioning axes via pulse-direction interface Up to 4 with SB 1222 PID controller Number of alarm inputs Potential separation Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Potential separation digital outputs Potential separation		6
Frequency measurement controlled positioning Number of position-inductive positioning axes, max. Number of position-inductive positioning axes, max. Number of positioning axes via pulse-direction interface PID controller Number of alarm inputs 4 Potential separation Potential separation digital inputs • Potential separation digital inputs • Potential separation digital inputs • Detween the channels, in groups of Potential separation digital outputs • Potential separation digital outputs • Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • Detween the channels, in groups of Potential separation digital outputs • No • Detween the channels, in groups of Potential separation digital outputs • No • Detween the channels, in groups of Potential separation digital outputs • No • Detween the channels, in groups of Potential separation digital outputs • No • Detween the channels, in groups of Potential separation digital outputs • No • Detween the channels, in groups of Potential separation digital outputs • No • Detween the channels, in groups of Potential separation digital outputs • No • Detween the channels, in groups of Potential separation digital outputs		
Controlled positioning Number of position-controlled positioning axes, max. Number of position-controlled positioning axes, max. Number of positioning axes via pulse-direction interface PID controller Number of aiarm inputs Potential separation digital outputs P		
Number of position-controlled positioning axes, max. Number of positioning axes via pulse-direction interface PID controller Number of alarm inputs Potential separation Potential separation digital inputs • Potential separation digital inputs • Potential separation digital inputs • Detential separation digital outputs • Potential separation digital outputs • Relays • Relays		
Number of positioning axes via pulse-direction interface PID controller Yes Number of alarm inputs Potential separation Potential separation digital inputs • Potential separation digital inputs • Potential separation digital outputs • Relays • Relays • Relays • Potential separation digital outputs • Potential separa		
PID controller Number of alarm inputs Potential separation digital outputs Potential separation digital inputs Potential separation digital outputs Potential separation digital inputs Potential separation digital outputs Potential separation digital inputs Potential separation digital outputs Potential sep		
Number of alarm inputs Potential separation Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Potential separation digital inputs Potential separation digital outputs Potential separation digital inputs Potential separation digital outputs Potential separation digital repairs		·
Potential separation digital inputs • Potential separation digital inputs • between the channels, in groups of 1 Potential separation digital outputs • between the channels No • between the channels Potential separation digital outputs • linterference immunity against discharge of static electricity • Interference immunity to cable-borne interference • Interference immunity to cable-borne interference • Interference immunity on supply lines acc. to IEC Potential Potential Separation of Separation S		
Potential separation digital inputs Potential separation digital inputs between the channels, in groups of Potential separation digital outputs Potential separation digital celetics Potent	·	4
Potential separation digital inputs between the channels, in groups of Potential separation digital outputs Potential separation digital outputs between the channels between the channels between the channels between the channels between the channels, in groups of EMC Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge — Test voltage at contact discharge — Test voltage at contact discharge Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity on signal cables acc. to IEC 61000-4-4 Interference immunity against voltage surge Interference immunity against voltage surge Interference immunity against conducted variable disturbance Interference immunity against conducted variable disturbance Interference immunity against conducted variable disturbance Interference immunity against injh-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 B, for use in residential areas Limit class of protection IP degree of protection IP degree of protection IP degree of protection Free fall Fall height, max. O.3 m; five times, in product package		
between the channels, in groups of Potential separation digital outputs Potential separation digital outputs between the channels No between the channels, in groups of Z EMC Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge — Test voltage at contact discharge — Test voltage at contact discharge — Interference immunity to cable-borne interference • Interference immunity to asple-borne interference • Interference immunity on supply lines acc. to IEC 61000-4-4 • Interference immunity against voltage surge • Interference immunity against tonducted 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 B, for use in industrial areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Fill degree of protection IP degree of protection IP degree of protection Free fall • Fall height, max. O.3 m; five times, in product package		
Potential separation digital outputs Potential separation digital outputs between the channels between the channels between the channels, in groups of EMC Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity Test voltage at air discharge Test voltage at contact discharge Test voltage at contact discharge Test voltage at contact discharge Interference immunity on supply lines acc. to IEC Finou-4-4 Interference immunity on signal cables acc. to IEC Finou-4-4 Interference immunity on supply lines acc. to IEC Finou-4-5 Interference immunity on supply lines acc. to IEC Finou-4-5 Interference immunity against voltage surge Interference immunity against voltage surge Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against ingh-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 Limit class B, for use in industrial areas Limit class B, for use in industrial areas Limit class B, for use in residential areas Limit class B, for use in residential areas Limit class B according to EN 55011 Degree and class of protection IP degree of protection IP degree of protection Free fall Free fall Fall height, max. O.3 m; five times, in product package	 Potential separation digital inputs 	500V AC for 1 minute
Potential separation digital outputs between the channels between the channels between the channels, in groups of EMC Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity across to IEC 61000-4-2 — Test voltage at air discharge Binterference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity on signal cables acc. to IEC 61000-4-4 Interference immunity against voltage surge Interference immunity against voltage surge Interference immunity against voltage surge Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against pigh-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 industrial areas Limit class B, for use in residential areas Limit class B, for use in residential areas Limit class B, for use in residential areas Pegree and class of protection Pegree of protection IP degree of protection Free fall Fall height, max. O.3 m; five times, in product package	between the channels, in groups of	1
between the channels between the channels, in groups of EMC Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge	Potential separation digital outputs	
between the channels, in groups of EMC Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge	 Potential separation digital outputs 	Relays
Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge 8 kV — Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity on signal cables acc. to IEC 61000-4-4 Interference immunity against voltage surge Interference immunity against voltage surge Interference immunity against voltage surge Interference immunity against conducted variable disturbance induced by high-frequency radiation acc. to IEC 61000-4-6 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 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 IP degree of protection IP degree of protection IP degree of protection Free fall Fall height, max. O.3 m; five times, in product package	 between the channels 	No
Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge	 between the channels, in groups of 	2
Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 — Test voltage at air discharge	EMC	
electricity acc. to IEC 61000-4-2 — Test voltage at air discharge — Test voltage at contact discharge 6 kV Interference immunity to cable-borne interference • Interference immunity on supply lines acc. to IEC 61000-4-4 • Interference immunity on signal cables acc. to IEC 61000-4-4 Interference immunity against voltage surge • 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 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 B, for use in residential areas Pes; Group 1 Yes; Group 1 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 IP degree of protection IP degree of protection P20 Ambient conditions Free fall • Fall height, max. 0.3 m; five times, in product package	Interference immunity against discharge of static electricity	
Test voltage at air discharge	Interference immunity against discharge of static	Yes
Interference immunity to cable-borne interference Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity on signal cables acc. to IEC 61000-4-4 Interference immunity against voltage surge Interference immunity on supply lines acc. to IEC 61000-4-5 Interference immunity against voltage surge 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 IP degree of protection IP degree fall Fall height, max. O.3 m; five times, in product package	electricity acc. to IEC 61000-4-2	
Interference immunity to cable-borne interference Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity on signal cables acc. to IEC 61000-4-4 Interference immunity against voltage surge 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 Imit class A, for use in industrial areas Imit class B, for use in residential areas Imit class B, for use in residential areas Imit class B, for use in residential areas Interference immunity against high-frequency fields Yes Yes Yes Yes Yes Interference immunity against high-frequency fields Yes Interference immunity against high-frequency fields Yes Interference immunity against voltage surge Yes Interference immunity against volta	 Test voltage at air discharge 	8 kV
Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity against voltage surge Interference immunity against voltage surge Interference immunity against voltage surge 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 and class of protection IP degree of protection IP degree of protection IP 20 Ambient conditions Free fall Fall height, max. Interference immunity against voltage surge Yes Yes Yes Yes Yes Yes Yes Y	Test voltage at contact discharge	6 kV
Interference immunity on signal cables acc. to IEC 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 and class of protection IP degree of protection IP20 Ambient conditions Free fall Fall height, max. O.3 m; five times, in product package	Interference immunity to cable-borne interference	
 Interference immunity on signal cables acc. to IEC 61000-4-4 Interference immunity against voltage surge 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 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 IP degree of protection IP20 Ambient conditions Free fall Fall height, max. 0.3 m; five times, in product package 		Yes
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 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 IP degree of protection IP degree, in product package		
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 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; 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 IP degree of protection IP degree of protection IP20 Ambient conditions Free fall Fall height, max. O.3 m; five times, in product package		Yes
 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 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 IP degree of protection IP20 Ambient conditions Free fall Fall height, max. 0.3 m; five times, in product package 		
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 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 Ambient conditions Free fall Fall height, max. O.3 m; five times, in product package		V
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; 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 IP degree of protection IP20 Ambient conditions Free fall Fall height, max. O.3 m; five times, in product package		Yes
 Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 Limit class A, for use in industrial areas Limit class B, for use in residential areas Ves; 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 IP degree of protection IP20 Ambient conditions Free fall Fall height, max. O.3 m; five times, in product package 		e induced by high-frequency fields
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; 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 IP degree of protection IP20 Ambient conditions Free fall • Fall height, max. 0.3 m; five times, in product package	· -	
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 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 IP degree of protection IP20 Ambient conditions Free fall • Fall height, max. 0.3 m; five times, in product package		1 53
 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 Ambient conditions Free fall Fall height, max. 0.3 m; five times, in product package 		
 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 Ambient conditions Free fall Fall height, max. 0.3 m; five times, in product package 		Yes: Group 1
the limits for Class B according to EN 55011 Degree and class of protection IP degree of protection Ambient conditions Free fall Fall height, max. 0.3 m; five times, in product package	•	
Degree and class of protection IP degree of protection Ambient conditions Free fall Fall height, max. 0.3 m; five times, in product package	- Emili sides 2, for decimination areas	
IP degree of protection Ambient conditions Free fall Fall height, max. O.3 m; five times, in product package	Degree and class of protection	
Ambient conditions Free fall • Fall height, max. 0.3 m; five times, in product package		IP20
Free fall Fall height, max. 0.3 m; five times, in product package		20
• Fall height, max. 0.3 m; five times, in product package		
		O 2 ms. five times in mandaut and the
Ambient temperature during operation		บ.ช m; tive times, in product package
	Affiblent temperature during operation	

a min	40 °C: = Tmin (incl. condensation/front); start up @ 25 °C
• min.	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 60 °C; = Tmax; Tmax > +55 °C number of simultaneously switched-on
• max.	digital inputs 7, digital outputs 5, analog inputs 2, analog outputs 2 (no
	adjacent points) with horizontal mounting position
At cold restart, min. Archient to respect used using attended to the property of the pro	-25 °C
Ambient temperature during storage/transportation • min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	100
Installation altitude above sea level, max.	2 000 m
 Ambient air temperature-barometric pressure- 	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin
altitude	(Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m); above 2 000 m max. 132 V AC
Relative humidity	
With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Vibrations	
 Vibration resistance during operation acc. to IEC 60068-2-6 	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
Operation, tested according to IEC 60068-2-6	Yes
Shock testing	VaculEC CO Dort 2 27 holf translate
tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Resistance	
Coolants and lubricants	Very lead disease and eit de 11 to 11 to 1
Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air
Use in stationary industrial systems	Vac Olars ODO stall for the second deviate and second for the second sec
— to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
— to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea — to biologically active substances according to	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on
EN 60721-3-6 — to chemically active substances according to	request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52
EN 60721-3-6	(severity degree 3); *
— to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *
Usage in industrial process technology — Against chemically active substances acc. to	Yes; Class 3 (excluding trichlorethylene)
EN 60654-4	1 co, Class o (excluding the more trylene)
 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
Remark	
 Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
 Coatings for printed circuit board assemblies acc. to EN 61086 	Yes; Class 2 for high reliability
 Protection against fouling acc. to EN 60664-3 	Yes; Type 1 protection
 Military testing according to MIL-I-46058C, Amendment 7 	Yes; Discoloration of coating possible during service life
 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A 	Yes; Conformal coating, Class A
Configuration	
Programming	
Programming language	

— LAD	Yes
— FBD	Yes
— SCL	Yes
Cycle time monitoring	
adjustable	Yes
Dimensions	
Width	130 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	550 g

last modified: 3/2/2021 🖸