SIEMENS

Data sheet

6AG1215-1AG31-2XB0

SIPLUS S7-1200 CPU 1215C DC/DC/DC -40...+70°C with conformal coating based on 6ES7215-1AG31-0XB0 . compact CPU, DC/DC/DC, 2 PROFINET "ports, onboard I/O: ""14 DI 24 V" "DC; 10 DO 24 V DC;"" 2 AI 0-10 V" DC, 2 AO 0-20 mA DC, Power supply: DC 20.4-28.8V DC, Program/data memory 100 KB



Figure similar

Concrelinformation	
General information	
Product type designation	CPU 1215C DC/DC/DC
Engineering with	
 Programming package 	STEP 7 V11 SP2 or higher
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Load voltage L+	
Rated value (DC)	24 V
 permissible range, lower limit (DC) 	5 V
 permissible range, upper limit (DC) 	250 V
Input current	
Current consumption (rated value)	500 mA; Typical
Current consumption, max.	1 500 A; 24 V DC

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
Dewerless	
Power loss Power loss, typ.	12 W
Memory	
Work memory	400.11.1
• integrated	100 kbyte
• expandable	No
Load memory	
• integrated	4 Mbyte
Backup	
• present	Yes; maintenance-free
• without battery	Yes
CPU processing times	
for bit operations, typ.	0.085 μs; / instruction
for word operations, typ.	1.7 μs; / instruction
for floating point arithmetic, typ.	2.5 μs; / instruction
CPU-blocks	
Number of blocks (total)	DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used
OB	
• Number, max.	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags),	10 kbyte
max.	
Flag	
• Number, max.	8 kbyte; Size of bit memory address area
Address area	
I/O address area	
Inputs	1 024 byte
Outputs	1 024 byte
Process image	
 Inputs, adjustable 	1 kbyte
 Outputs, adjustable 	1 kbyte
Hardware configuration	
Number of modules per system, max.	3 communication modules, no signal board can be used, 8 signal modules

Clock Yes • Backup time • Boly time • Backup time • Boly time • Backup time • Backup time • Boly time • Backup • Backup time • Backup time	Time of day	
 Backup time Backup time Box bit in puts Deviation per day, max. 480 h; Typical 460 s/month at 25 °C Digital inputs 14; Integrated 6; HSC (High Speed Counting) functions Source/sink input Yes Number of simultaneously controllable inputs all mounting positions 		
• Deviation per day, max. ±80 s/month at 25 °C Pigital inputs 14; Integrated • of which inputs usable for technological functions 6; HSC (High Speed Counting) Source/sink input Yes Number of simultaneously controllable inputs 14 all mounting positions - - up to 40 °C, max. 14 Input voltage - • Fasted value (DC) 24 V • for signal °C 5 V DC at 1 mA • for signal °C 5 V DC at 2.5 mA Input delay (for rated value of input voltage) 1 mA for signal °C 1 mA Input delay (for rated value of input voltage) 1 mA for signal °C 1.2 ms, selectable in groups of four - 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 °C'n °C °C Yes for iterupt inputs - - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz Cable length - • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions • uns	 Hardware clock (real-time) 	Yes
Digital inputs 14; Integrated • of which inputs usable for technological functions 14; Integrated Source/sink input Yes Number of simultaneously controllable inputs 14 Input voltage 15 V DC at 1 mA • for signal "0" 5 V DC at 2.5 mA Input during notification of input voltage) 15 V DC at 2.5 mA for signal "1", typ. 1 mA Input during not rated value of input voltage) 1 mA Input during not signal "1", typ. 1 mA Input during not signal "1", typ. 1 mA Input during not signal "1", min. 0.2 ms - at "0" to "1", max. 12.8 ms for interrupt inputs - - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length . • ushielded, max. 500 m; 50 m for technological functions • unshielded, max. 500 m; 50 m for technological	Backup time	480 h; Typical
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	• Deviation per day, max.	±60 s/month at 25 °C
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	Digital inputs	
functions Ves Source/sink input Yes Number of simultaneously controllable inputs all mounting positions		14; Integrated
Source/sink input Yes Number of simultaneously controllable inputs all mounting positions up to 40 °C, max. 14 Input voltage Fated value (DC) 24 V • for signal "0" 5 V DC at 1 mA • for signal "1" 15 V DC at 2.5 mA Input current 6 for signal "1", typ. 1 mA Input delay (for rated value of input voltage) 7 mA 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; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz. Cable length - • shielded, max. 500 m; 50 m for technological functions: No • unshielded, max. 300 m; for technological functions: No Piptial outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+48 V)	 of which inputs usable for technological 	6; HSC (High Speed Counting)
Number of simultaneously controllable inputs all mounting positions 14 Input voltage 14 Input voltage 5 V DC at 1 mA • Rated value (DC) 24 V • for signal "0" 5 V DC at 2.5 mA Input current 15 V DC at 2.5 mA • for signal "1", typ. 1 mA Input delay (for rated value of input voltage) 1 mA • 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, differential: 3 at 80 kHz & 3 at 30 kHz Cable length - • shielded, max. 500 m; 50 m for technological functions: No Piglial outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Shorichic cuputs 10	functions	
all mounting positions 14 Input voltage 24 V • Rated value (DC) 24 V • for signal "1" 5 V DC at 1 mA • for signal "1" 15 V DC at 2.5 mA Input current • for signal "1", typ. • for signal "1", typ. 1 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 Ves; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 30 kHz, differential: 3 at 30 kHz & 3 at 30 kHz Cable length • shielded, max. • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions • of which high-speed outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (48 V) Switch	Source/sink input	Yes
up to 40 °C, max. 14 Input voltage 24 V • Rated value (DC) 24 V • for signal "0" 5 V DC at 1 mA • for signal "1" 15 V DC at 2.5 mA Input current - • for signal "1", typ. 1 mA Input delay (for rated value of input voltage) - for standard inputs -	Number of simultaneously controllable inputs	
Input voltage Input voltage • Rated value (DC) 24 V • for signal "0" 5 V DC at 1 mA • for signal "1" 15 V DC at 2.5 mA Input current • • for signal "1", typ. 1 mA Input delay (for rated value of input voltage) • for standard inputs -	all mounting positions	
• Rated value (DC) 24 V • for signal "0" 5 V DC at 1 mA • for signal "1" 15 V DC at 2.5 mA Input current 1 mA • for signal "1", typ. 1 mA Input delay (for rated value of input voltage) 1 mA 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", max. 0.2 ms at "0" to "1", max. 12.8 ms for interrupt inputs - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz • unshielded, max. 500 m; 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions: No Digital outputs 10 • of which high-speed outputs 4: 100 kHz Pulse Train Output Short-icricut protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (48 V) Switching capacity of the outputs 5.4 • with resistive load, max. 0.5 A <t< td=""><td>— up to 40 °C, max.</td><td>14</td></t<>	— up to 40 °C, max.	14
• for signal '0"5 V DC at 1 mA• for signal '1", top.15 V DC at 2.5 mAInput current-• for signal "1", typ.1 mAInput delay (for rated value of input voltage)1 mAInput delay (for rated value of input voltage)-for standard inputs parameterizableYes; 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 msfor interrupt inputs parameterizableYesfor technological functions- parameterizableYes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHzCable lengthSoo m; 50 m for technological functions• unshielded, max.500 m; 50 m for technological functions• unshielded, max.10• of which high-speed outputs10• of which high-speed outputs4; 100 kHz Pulse Train OutputShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage toL+ (+48 V)Switching capacity of the outputs5 A• with resistive load, max.0.5 A• on lamp load, max.5 W	Input voltage	
• for signal "1" 15 V DC at 2.5 mA Input current • for signal "1", typ. 1 mA Input delay (for rated value of input voltage) for standard inputs • 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 - parameterizable Yes Yes for technological functions - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length - shielded, max. 500 m; 50 m for technological functions • unshielded, max. • shielded, max. 500 m; for technological functions No • unshielded, max. 500 m; for technological functions No • of which high-speed outputs 10 + (100 kHz Pulse Train Output Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (48 V) Switching capacity of the outputs 0.5 A 5 W	 Rated value (DC) 	24 V
Input current 1 mA Input delay (for rated value of input voltage) 1 mA for signal "1", typ. 1 mA Input delay (for rated value of input voltage) 50 rs 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; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz. Cable length 500 m; 50 m for technological functions • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions Number of digital outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (-48 V) Switching capacity of the outputs 0.5 A • with resistive load, max. 0.5 A • on lamp load, max. 5 W	● for signal "0"	5 V DC at 1 mA
• for signal "1", typ. 1 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; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz. Cable length Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz. Cable length 500 m; 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions Number of digital outputs 10 • of which high-speed outputs 10 • of which high-speed outputs 10 • of which shudown voltage to L+ (-48 V) Switching capacity of the outputs 0.5 A • with resistive load, max. 0.5 A • on lamp load, max. 5 W	• 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 So0 m; 50 m for technological functions • unshielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions Number of digital outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (-48 V) Switching capacity of the outputs 0.5 A • on lamp load, max. 5W	Input current	
for standard inputs	● for signal "1", typ.	1 mA
parameterizableYes; 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 msfor interrupt inputs parameterizableYesfor technological functions parameterizableYes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHzCable length• shielded, max.500 m; 50 m for technological functions 80 m; for technological functions• unshielded, max.500 m; for technological functions 	Input delay (for rated value of input voltage)	
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at "0" to "1", max. 12.8 ms for interrupt inputs parameterizable parameterizable Yes for technological functions parameterizable parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length shielded, max. • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (-48 V) Switching capacity of the outputs 0.5 A • on lamp load, max. 5 W	— parameterizable	
for interrupt inputs Yes for technological functions Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz - parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length 500 m; 50 m for technological functions • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (-48 V) Switching capacity of the outputs 0.5 A • with resistive load, max. 5 W	— at "0" to "1", min.	0.2 ms
— parameterizableYesfor technological functions— parameterizableYes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz & 3 at 30 kHzCable length• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; for technological functions: NoDigital outputsNumber of digital outputs10• of which high-speed outputs4; 100 kHz Pulse Train OutputShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage toL+ (-48 V)Switching capacity of the outputs0.5 A• with resistive load, max.0.5 A• on lamp load, max.5 W	— at "0" to "1", max.	12.8 ms
for technological functions — parameterizable Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz Cable length • • shielded, max. 500 m; 50 m for technological functions • unshielded, max. 300 m; for technological functions: No Digital outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (-48 V) Switching capacity of the outputs 0.5 A • with resistive load, max. 5.05 A • on lamp load, max. 5 W	for interrupt inputs	
— parameterizableYes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHzCable length• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; for technological functions: NoDigital outputsNumber of digital outputs10• of which high-speed outputs4; 100 kHz Pulse Train OutputShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage toL+ (-48 V)Switching capacity of the outputs0.5 A• with resistive load, max.5 W	— parameterizable	Yes
Key Start80 kHz & 3 at 30 kHzCable length500 m; 50 m for technological functions• shielded, max.500 m; 50 m for technological functions• unshielded, max.300 m; for technological functions: NoDigital outputs10• of which high-speed outputs4; 100 kHz Pulse Train OutputShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage toL+ (-48 V)Switching capacity of the outputs0.5 A• with resistive load, max.5 W	for technological functions	
 shielded, max. unshielded, max. 300 m; for technological functions: No 300 m; for technological functions: No Digital outputs Number of digital outputs 10 of which high-speed outputs 4; 100 kHz Pulse Train Output Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (-48 V) Switching capacity of the outputs 0.5 A on lamp load, max. 5 W 	— parameterizable	
• unshielded, max.300 m; for technological functions: NoDigital outputs10• of which high-speed outputs4; 100 kHz Pulse Train OutputShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage toL+ (-48 V)Switching capacity of the outputs0.5 A• with resistive load, max.0.5 A• on lamp load, max.5 W	Cable length	
Digital outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (-48 V) Switching capacity of the outputs 0.5 A • with resistive load, max. 0.5 A • on lamp load, max. 5 W	• shielded, max.	500 m; 50 m for technological functions
Number of digital outputs 10 • of which high-speed outputs 4; 100 kHz Pulse Train Output Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (-48 V) Switching capacity of the outputs 0.5 A • with resistive load, max. 0.5 A • on lamp load, max. 5 W	• unshielded, max.	300 m; for technological functions: No
• of which high-speed outputs4; 100 kHz Pulse Train OutputShort-circuit protectionNo; to be provided externallyLimitation of inductive shutdown voltage toL+ (-48 V)Switching capacity of the outputs0.5 A• with resistive load, max.0.5 A• on lamp load, max.5 W	Digital outputs	
Short-circuit protection No; to be provided externally Limitation of inductive shutdown voltage to L+ (-48 V) Switching capacity of the outputs 0.5 A • with resistive load, max. 0.5 A • on lamp load, max. 5 W	Number of digital outputs	10
Limitation of inductive shutdown voltage to L+ (-48 V) Switching capacity of the outputs 0.5 A • with resistive load, max. 0.5 A • on lamp load, max. 5 W	 of which high-speed outputs 	4; 100 kHz Pulse Train Output
Switching capacity of the outputs • with resistive load, max. • on lamp load, max. 5 W	Short-circuit protection	No; to be provided externally
 with resistive load, max. on lamp load, max. 5 W 	Limitation of inductive shutdown voltage to	L+ (-48 V)
• on lamp load, max. 5 W	Switching capacity of the outputs	
	 with resistive load, max. 	0.5 A
Output voltage	● 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
-	0.1 mA
• for signal "0" residual current, max.	0.1111A
Output delay with resistive load	1.10
• "0" to "1", max.	1 μs
• "1" to "0", max.	5 µs
Switching frequency	
• of the pulse outputs, with resistive load, max.	100 kHz
Relay outputs	
Number of relay outputs	0
Cable length	
 shielded, max. 	500 m
• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	
Voltage	Yes
Input ranges (rated values), voltages	
• 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	2
Output ranges, current	-
• 0 to 20 mA	Yes
Cable length	
• shielded, max.	100 m; shielded, twisted pair
- Shielded, max.	
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), 	10 bit
max.	

Encoder	
Connectable encoders	
• 2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Protocols	
PROFINET IO Controller	Yes
2. Interface	
Interface type	PROFINET
Physics	Ethernet
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIBUS	Yes
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
Integrated Functions	
Number of counters	6
Counting frequency (counter) max.	100 kHz
Frequency measurement	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
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
Permissible potential difference	
between different circuits	500 V DC between 24 V DC and 5 V DC
EMC	
Interference immunity against discharge of static electri	city
 Interference immunity against discharge of 	Yes
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 	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 distur	bance induced by high-frequency fields
Interference immunity against high-frequency	Yes
radiation acc. to IEC 61000-4-6	
radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011	
	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	
Degree of protection acc. to EN 60529	
• IP20	Yes
Ambient conditions	
Free fall	
 Fall height, max. 	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-40 °C; = Tmin; Startup @ -25 °C
• max.	70 °C; = Tmax; > +60 °C Number of simultaneously controllable inputs and outputs max. 50%; no signal board can be used
 horizontal installation, min. 	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C
 horizontal installation, max. 	70 °C; = Tmax; > +60 °C Number of simultaneously controllable inputs and outputs max. 50%; no signal board can be used
 vertical installation, min. 	-40 °C; = Tmin; Startup @ -25 °C
 vertical installation, max. 	50 °C; = Tmax
• At cold restart, min.	-25 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	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 +5 000 m)
Relative humidity	
 With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Vibrations	
 Vibration resistance during operation acc. to IEC 60068-2-6 	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
 Operation, tested according to IEC 60068-2-6 	Yes
Shock testing	
 tested according to IEC 60068-2-27 	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Resistance	
Coolants and lubricants	
 Resistant to commercially available coolants and lubricants 	Yes; Incl. diesel and oil droplets in the air
Use in stationary industrial systems	

 — to biologically active substances according to EN 60721-3-3 	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
 — to chemically active substances according to EN 60721-3-3 	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *
 — to mechanically active substances according to EN 60721-3-3 	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
 — to biologically active substances according to EN 60721-3-6 	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
 — to chemically active substances according to EN 60721-3-6 	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *
 — to mechanically active substances according to EN 60721-3-6 	Yes; Class 6S3 incl. sand, dust; *
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 availability
 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	

Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Cycle time monitoring	
• adjustable	Yes

Dimensione		
Dimensions Width	130 mm	
	100 mm	
Height Depth	75 mm	
Mainhta		

Weights	
Weight, approx.	520 g
last modified:	09/05/2019