## **SIEMENS**

Data sheet

## 6AG1214-1BG40-2XB0

SIPLUS S7-1200 CPU 1214C AC/DC/relay -40...+70°C with conformal coating based on 6ES7214-1BG40-0XB0 . compact CPU, AC/DC/relay, onboard I/O: 14 DI 24 V DC 10 DO relay 2 A 2 AI 0-10 V DC, Power supply: AC 85-264 V AC @ 47-63 Hz, Program/data memory 100 KB

General information	
Product type designation	CPU 1214C AC/DC/relay
Firmware version	V4.1
Engineering with	
<ul> <li>Programming package</li> </ul>	STEP 7 V13 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)	264 V
Line frequency	
<ul> <li>permissible range, lower limit</li> </ul>	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
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	20.4 to 28.8V
Power loss	
Power loss, typ.	14 W
Memory	
Work memory	
• integrated	100 kbyte
• expandable	No
Load memory	
• integrated	4 Mbyte

10/19/2020

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Backup         Yes: maintenance-free           • present         Yes: maintenance-free           • without battery         Yes           CPU processing times         0.085 µs; / instruction           for hit operations, typ.         0.085 µs; / instruction           for hit operations, typ.         0.17 µs; / instruction           for hit operations, typ.         2.3 µs; / instruction           for bit operations, typ.         2.3 µs; / instruction           certain point arithmetic, typ.         2.3 µs; / instruction           CPU-blocks         DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used           CPU         • Number, max.         Limited only by RAM for code           Data areas and their retentivity         Exercise in ange           e Number, max.         8 kbyte; Size of bit memory address area           Address area         I b kbyte           e Number, max.         8 kbyte; Size of bit memory address area           Address area         I kbyte           e loguts, adjustable         1 kbyte           e loguts, adjustable         1 kbyte           e loguts, adjustable         1 kbyte           e loguts, adjustable         6 s/month at 25 °C           Dividing poet (coc	<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	with SIMATIC memory card
without battery         Yes           CPU processing times         0.085 µs; / instruction           for bit operations, typ.         0.085 µs; / instruction           for word operations, typ.         1.7 µs; / instruction           for word operations, typ.         2.3 µs; / instruction           construction         2.3 µs; / instruction           CPU-blocks         DBS, FCS, FBS, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used           OB         estriction, the entire working memory can be used           OB         10 kbyte           e- Number, max.         Limited only by RAM for code           Data areas and their retentivity         10 kbyte           Retentive data area (incl. timers, counters, flags), max.         10 kbyte           Flag         10 kbyte           e- Number, max.         8 kbyte; Size of bit memory address area           Address area         Process image           e- Inputs, adjustable         1 kbyte           Process image         1 kbyte           e- Inputs, adjustable         1 kbyte           Process image         6 orimonth at 25 °C           Oblack         Eackup time           e- Backup time         60 s'month at 25 °C           Dis		
CPU processing times         Output           for bit operations, typ.         0.085 µs; / instruction           for word oparations, typ.         1.7 µs; / instruction           for floating point arithmetic, typ.         2.3 µs; / instruction           CPU-blocks         DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used           OB         Limited only by RAM for code           OB         Elemented at a rea (incl. timers, counters, flags), max.           Flag         10 kbyte           e Number, max.         8 kbyte; Size of bit memory address area           Address area         Process image           e Inputs, adjustable         1 kbyte           e Otaputs, adjustable         1 kbyte           Process image         1 kbyte           e Otaputs, adjustable         1 kbyte           Diputs, adjustable         1 kbyte           Diputs, adjustable         1 kbyte           Diputs, adjustable         1 kbyte	• present	Yes; maintenance-free
for bit operations, typ.     0.085 µs; / instruction       for word operations, typ.     1.7 µs; / instruction       for floating point arithmetic, typ.     2.3 µs; / instruction       CPU-blocks     DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used       OB     Itimited only by RAM for code       Plag     Itimited only by RAM for code       Process image     Itimited only by RAM for code       I Inputs, adjustable     1 kbyte       I Inputs, adjustable     1 kbyte       Hardware configuration     3 communication modules, no signal board can be used, 8 signal modules       Time of day     Itime of day       Clock     Itime of day       Ob s/month	<ul> <li>without battery</li> </ul>	Yes
for bit operations, typ.     0.085 µs; / instruction       for word operations, typ.     1.7 µs; / instruction       for floating point arithmetic, typ.     2.3 µs; / instruction       CPU-blocks     DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used       OB     Itimited only by RAM for code       Plag     Itimited only by RAM for code       Process image     Itimited only by RAM for code       I Inputs, adjustable     1 kbyte       I Inputs, adjustable     1 kbyte       Hardware configuration     3 communication modules, no signal board can be used, 8 signal modules       Time of day     Itime of day       Clock     Itime of day       Ob s/month	·	
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 65636. There is no restriction, the entire working memory can be used         OB		0.005 up l'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), max.       10 kbyte         Flag       -         • Number, max.       8 kbyte; Size of bit memory address area         Address area       -         Process image       -         • Inputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         Process image       -         • Inputs, adjustable       1 kbyte         • Doutputs, adjustable       1 kbyte         Process image       -         • Inputs, adjustable       3 communication modules, no signal board can be used, 8 signal modules         Time of day       -         Clock       -<		
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       .         • Number, max.       8 kbyte; Size of bit memory address area         Address area       .         Process image       1 kbyte         • Inputs, adjustable       1 kbyte         • Inputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         Process image       .         • Inputs, adjustable       1 kbyte         Process image       .         • Inputs, adjustable       1 kbyte         Process image       .         • Outputs, adjustable       1 kbyte         Process image       .         • Inputs, adjustable       1 kbyte         Number of modules per system, max.       3 communication modules, no signal board can be used, 8 signal modules         Time of day       .         Clock       .         • Baca		
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         It wited only by RAM for code           Retentive data area (incl. timers, counters, flags), max.         10 kbyte           Flag         10 kbyte           • Number, max.         8 kbyte; Size of bit memory address area           Address area         • Number, max.           Process image         1 kbyte           • Inputs, adjustable         1 kbyte           • Outputs, adjustable         1 kbyte           • Outputs, adjustable         1 kbyte           • Outputs, adjustable         1 kbyte           • Number of modules per system, max.         3 communication modules, no signal board can be used, 8 signal modules           Time of day         Clock           • Hardware clock (real-time)         Yes           • Backup time         480 h; Typical           • Deviation per day, max.         60 simonth at 25 °C           Digital inputs         14; integrated           • of which inputs usable for technological functions         6; HSC (High Speed Counting)           Source/sink input         Yes	for floating point arithmetic, typ.	2.3 µs; / instruction
addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used       OB       • Number, max.     Limited only by RAM for code       Data areas and their retentivity     In byte       Retentive data area (incl. timers, counters, flags), max.     10 kbyte       Flag     In byte, max.       e Number, max.     8 kbyte; Size of bit memory address area       Address area     In byte, size of bit memory address area       Address area     1 kbyte       Process image     1 kbyte       • Inputs, adjustable     1 kbyte       • Outputs, adjustable     1 kbyte       • Outputs, adjustable     1 kbyte       • Outputs, adjustable     1 kbyte       • Number of modules per system, max.     3 communication modules, no signal board can be used, 8 signal modules       Time of day     Imodules       Clock     Imodules       • Hardware clock (real-time)     Yes       • Backup time     480 h; Typical       • Deviation per day, max.     60 s/month at 25 °C       Digital inputs     14; Integrated       • of which inputs usable for technological functions     6; HSC (High Speed Counting)       • functions     Yes       Number of simultaneously controllable inputs     48 (High Speed Counting)       • of which inputs usable for technological functions     6;	CPU-blocks	
• Number, max.       Limited only by RAM for code         Data areas and their retentivity         Retentive data area (incl. timers, counters, flags), max.       10 kbyte         Flag       10 kbyte         • Number, max.       8 kbyte; Size of bit memory address area         Address area       10 kbyte         Process image       1 kbyte         • Inputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         Process image       1 kbyte         • Number of modules per system, max.       3 communication modules, no signal board can be used, 8 signal modules         Time of day       3 communication modules, no signal board can be used, 8 signal modules         Clock       480 h; Typical         • Hardware clock (real-time)       Yes         • Backup time       480 h; Typical         • Deviation per day, max.       60 s/month at 25 °C         Digital inputs       14; Integrated         • of which inputs usable for technological functions       First (High Speed Counting)         • of which inputs usable for technological functions       Yes         Source/sink input       Yes         Number of simultaneously controllable inputs       If acounting positions         all m	Number of blocks (total)	addressable blocks ranges from 1 to 65535. There is no
Data area and their retentivity         Retentive data area (incl. timers, counters, flags), max.       10 kbyte         Flag       *         • Number, max.       8 kbyte; Size of bit memory address area         Address area       *         Process image       1 kbyte         • Inputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         • Number of modules per system, max.       3 communication modules, no signal board can be used, 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       14; Integrated         • of which inputs usable for technological functions       6; HSC (High Speed Counting)         Source/sink input       Yes         Number of simultaneously controllable inputs       14	OB	
Retentive data area (incl. timers, counters, flags), max.       10 kbyte         Flag          • Number, max.       8 kbyte; Size of bit memory address area         Address area          Process image       1 kbyte         • Inputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         Hardware configuration       3 communication modules, no signal board can be used, 8 signal modules         Time of day       3 communication modules, no signal board can be used, 8 signal modules         Clock          • Hardware clock (real-time)       Yes         • Backup time       480 h; Typical         • Deviation per day, max.       60 s/month at 25 °C         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       6; HSC (High Speed Counting)         all mounting positions       — up to 40 °C, max.       14	• Number, max.	Limited only by RAM for code
Retentive data area (incl. timers, counters, flags), max.       10 kbyte         Flag          • Number, max.       8 kbyte; Size of bit memory address area         Address area          Process image       1 kbyte         • Inputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         Hardware configuration       3 communication modules, no signal board can be used, 8 signal modules         Time of day       3 communication modules, no signal board can be used, 8 signal modules         Clock          • Hardware clock (real-time)       Yes         • Backup time       480 h; Typical         • Deviation per day, max.       60 s/month at 25 °C         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       6; HSC (High Speed Counting)         all mounting positions       — up to 40 °C, max.       14	Data areas and their retentivity	
• Number, max.       8 kbyte; Size of bit memory address area         Address area         Process image         • Inputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         Hardware configuration       3 communication modules, no signal board can be used, 8 signal modules         Number of modules per system, max.       3 communication modules, no signal board can be used, 8 signal modules         Clock       -         Vertex       • Hardware clock (real-time)         • Backup time       480 h; Typical         • Deviation per day, max.       60 s/month at 25 °C         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       41		10 kbyte
Address area         Process image         • Inputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         Hardware configuration       3 communication modules, no signal board can be used, 8 signal modules         Number of modules per system, max.       3 communication modules, no signal board can be used, 8 signal modules         Clock       -         • Hardware clock (real-time)       Yes         • Backup time       480 h; Typical         • Deviation per day, max.       60 s/month at 25 °C         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       41         all mounting positions       14	Flag	
Process image         Inputs, adjustable       1 kbyte         Outputs, adjustable       1 kbyte         Hardware configuration       3 communication modules, no signal board can be used, 8 signal modules         Number of modules per system, max.       3 communication modules, no signal board can be used, 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       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       14	• Number, max.	8 kbyte; Size of bit memory address area
• Inputs, adjustable       1 kbyte         • Outputs, adjustable       1 kbyte         Hardware configuration       3 communication modules, no signal board can be used, 8 signal modules         Number of modules per system, max.       3 communication modules, no signal board can be used, 8 signal modules         Time of day       5 communication modules, no signal board can be used, 8 signal modules         Clock       5 communication modules, no signal board can be used, 8 signal modules         • Hardware clock (real-time)       Yes         • Backup time       480 h; Typical         • Deviation per day, max.       60 s/month at 25 °C         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       Yes         all mounting positions       14	Address area	
• Outputs, adjustable       1 kbyte         Hardware configuration       3 communication modules, no signal board can be used, 8 signal modules         Number of modules per system, max.       3 communication modules, no signal board can be used, 8 signal modules         Time of day	Process image	
Hardware configuration       3 communication modules, no signal board can be used, 8 signal modules         Time of day       3 communication modules, no signal board can be used, 8 signal modules         Clock       Ves         • Hardware clock (real-time)       Yes         • Backup time       480 h; Typical         • Deviation per day, max.       60 s/month at 25 °C         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       14	<ul> <li>Inputs, adjustable</li> </ul>	1 kbyte
Number of modules per system, max.       3 communication modules, no signal board can be used, 8 signal modules         Time of day       Imodules         Clock       Ves         • Hardware clock (real-time)       Yes         • Backup time       480 h; Typical         • Deviation per day, max.       60 s/month at 25 °C         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       14         all mounting positions       14	<ul> <li>Outputs, adjustable</li> </ul>	1 kbyte
Number of modules per system, max.       3 communication modules, no signal board can be used, 8 signal modules         Time of day       Imodules         Clock       Ves         • Hardware clock (real-time)       Yes         • Backup time       480 h; Typical         • Deviation per day, max.       60 s/month at 25 °C         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       14         all mounting positions       14	Hardware configuration	
Clock       Yes         • 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       Yes         all mounting positions       14		
• Hardware clock (real-time)Yes• Backup time480 h; Typical• Deviation per day, max.60 s/month at 25 °CDigital inputs14; Integrated• of which inputs usable for technological functions6; HSC (High Speed Counting)Source/sink inputYesNumber of simultaneously controllable inputsYes• of which operations14; Integrated• of which operations14• of which operationsYes• of which operations14• of which operations14	Time of day	
• Backup time480 h; Typical• Deviation per day, max.60 s/month at 25 °CDigital inputs60 s/month at 25 °CNumber of digital inputs14; Integrated• of which inputs usable for technological functions6; HSC (High Speed Counting)Source/sink inputYesNumber of simultaneously controllable inputs14all mounting positions14- up to 40 °C, max.14	Clock	
• Deviation per day, max.60 s/month at 25 °CDigital inputs60 s/month at 25 °CDigital inputs14; Integrated• of which inputs usable for technological functions6; HSC (High Speed Counting)Source/sink inputYesNumber of simultaneously controllable inputsYesall mounting positions14- up to 40 °C, max.14	<ul> <li>Hardware clock (real-time)</li> </ul>	Yes
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     14       all mounting positions     14	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	<ul> <li>Deviation per day, max.</li> </ul>	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	Digital inputs	
• of which inputs usable for technological functions6; HSC (High Speed Counting)Source/sink inputYesNumber of simultaneously controllable inputsImput Section Secti		14; Integrated
Number of simultaneously controllable inputs       all mounting positions       — up to 40 °C, max.       14	<ul> <li>of which inputs usable for technological</li> </ul>	
all mounting positions — up to 40 °C, max. 14	Source/sink input	Yes
— up to 40 °C, max. 14	Number of simultaneously controllable inputs	
	all mounting positions	
Input voltage	— up to 40 °C, max.	14
	Input voltage	

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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	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	
Number of digital outputs	10; Relays
Switching capacity of the outputs	
with resistive load, max.	2 A
• on lamp load, max.	30 W with DC, 200 W with AC
Output delay with resistive load	
• "0" to "1", max.	10 ms; max.
• "1" to "0", max.	10 ms; max.
Switching frequency	
<ul> <li>of the pulse outputs, with resistive load, max.</li> </ul>	1 Hz
Relay outputs	
<ul> <li>Number of relay outputs</li> </ul>	10
<ul> <li>Number of operating cycles, max.</li> </ul>	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
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
— Input resistance (0 to 10 V)	≥100k ohms
Cable length	

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• shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	0
Analog value concretion for the inpute	
Analog value generation for the inputs Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign),	10 bit
max.	
<ul> <li>Integration time, parameterizable</li> </ul>	Yes
Conversion time (per channel)	625 µs
Encoder	
Connectable encoders	N .
• 2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Interface types	
• RJ 45 (Ethernet)	Yes
Protocols	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes; Also simultaneously with IO-Device functionality
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
<ul> <li>User-defined websites</li> </ul>	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,
• Variables	counters
Forcing	
Forcing	Yes
Diagnostic buffer	
● present	Yes
Traces	
<ul> <li>Number of configurable Traces</li> </ul>	2; Up to 512 KB of data per trace are possible
ntegrated 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
Potential separation	
Potential separation digital inputs	
<ul> <li>Potential separation digital inputs</li> </ul>	500V AC for 1 minute
<ul> <li>between the channels, in groups of</li> </ul>	1
Potential separation digital outputs	
<ul> <li>Potential separation digital outputs</li> </ul>	Relays
• between the channels	No
• between the channels, in groups of	2
EMC	

Interference immunity against discharge of static electri	city
<ul> <li>Interference immunity against discharge of</li> </ul>	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	
<ul> <li>Interference immunity on supply lines acc. to</li> </ul>	Yes
IEC 61000-4-4	
<ul> <li>Interference immunity on signal cables acc. to</li> </ul>	Yes
IEC 61000-4-4	
Interference immunity against voltage surge	
<ul> <li>Interference immunity on supply lines acc. to</li> </ul>	Yes
IEC 61000-4-5	
Interference immunity against conducted variable distur	
<ul> <li>Interference immunity against high-frequency radiation acc. to IEC 61000-4-6</li> </ul>	Yes
Emission of radio interference acc. to EN 55 011	
<ul> <li>Limit class A, for use in industrial areas</li> </ul>	Yes; Group 1
<ul> <li>Limit class B, for use in residential areas</li> </ul>	Yes; When appropriate measures are used to ensure compliance
	with the limits for Class B according to EN 55011
Degree and class of protection	
	1000
IP degree of protection	IP20
	IP20
IP degree of protection Ambient conditions Free fall	IP20
Ambient conditions	0.3 m; five times, in product package
Ambient conditions Free fall	
Ambient conditions Free fall • Fall height, max.	
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation	0.3 m; five times, in product package
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.	0.3 m; five times, in product package -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °C; = Tmax; Tmax > +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.	0.3 m; five times, in product package -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °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; Tmax > +60 °C
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.	0.3 m; five times, in product package -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °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; Tmax > +60 °C number of simultaneously switched-on digital inputs 7, digital
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.	0.3 m; five times, in product package -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °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; Tmax > +60 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 1 (no adjacent points) with horizontal
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.	0.3 m; five times, in product package -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °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; Tmax > +60 °C number of simultaneously switched-on digital inputs 7, digital
Ambient conditions Free fall • Fall height, max. Ambient temperature during operation • min. • max. • Max.	0.3 m; five times, in product package -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °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; Tmax > +60 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 1 (no adjacent points) with horizontal mounting position
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.         • max.	0.3 m; five times, in product package -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °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; Tmax > +60 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 1 (no adjacent points) with horizontal mounting position
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.         • max.	0.3 m; five times, in product package -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 70 °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; Tmax > +60 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 1 (no adjacent points) with horizontal mounting position -25 °C
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.         • max.	<ul> <li>0.3 m; five times, in product package</li> <li>-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C</li> <li>70 °C; = Tmax; Tmax &gt; +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position; Tmax &gt; +60 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 1 (no adjacent points) with horizontal mounting position -25 °C</li> <li>-40 °C</li> </ul>
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.         • max.         • At cold restart, min.         Ambient temperature during storage/transportation         • min.         • max.         At cold restart, min.         Ambient temperature during storage/transportation         • min.         • max.         Altitude during operation relating to sea level	<ul> <li>0.3 m; five times, in product package</li> <li>-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C</li> <li>70 °C; = Tmax; Tmax &gt; +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position; Tmax &gt; +60 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 1 (no adjacent points) with horizontal mounting position -25 °C</li> <li>-40 °C</li> </ul>
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.         • max.         • At cold restart, min.         Ambient temperature during storage/transportation         • min.         • max.         Attitude during operation relating to sea level         • Installation altitude above sea level, max.	<ul> <li>0.3 m; five times, in product package</li> <li>-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C</li> <li>70 °C; = Tmax; Tmax &gt; +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position; Tmax &gt; +60 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 1 (no adjacent points) with horizontal mounting position -25 °C</li> <li>-40 °C</li> <li>-40 °C</li> <li>70 °C</li> <li>2 000 m</li> </ul>
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.         • max.         • At cold restart, min.         Ambient temperature during storage/transportation         • min.         • max.         At cold restart, min.         Ambient temperature during storage/transportation         • min.         • max.         Altitude during operation relating to sea level	<ul> <li>0.3 m; five times, in product package</li> <li>-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C</li> <li>70 °C; = Tmax; Tmax &gt; +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position; Tmax &gt; +60 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 1 (no adjacent points) with horizontal mounting position -25 °C</li> <li>-40 °C</li> <li>70 °C</li> </ul>
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.         • max.         • At cold restart, min.         Ambient temperature during storage/transportation         • min.         • max.         Ambient temperature during storage/transportation         • min.         • max.         Altitude during operation relating to sea level         • Installation altitude above sea level, max.         • Ambient air temperature-barometric pressure-	<ul> <li>0.3 m; five times, in product package</li> <li>-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C</li> <li>70 °C; = Tmax; Tmax &gt; +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position; Tmax &gt; +60 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 1 (no adjacent points) with horizontal mounting position -25 °C</li> <li>-40 °C 70 °C</li> <li>2 000 m</li> <li>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</li> </ul>
Ambient conditions         Free fall         • Fall height, max.         Ambient temperature during operation         • min.         • max.         • At cold restart, min.         Ambient temperature during storage/transportation         • min.         • max.         Ambient temperature during storage/transportation         • min.         • max.         Altitude during operation relating to sea level         • Installation altitude above sea level, max.         • Ambient air temperature-barometric pressure-	<ul> <li>0.3 m; five times, in product package</li> <li>-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C</li> <li>70 °C; = Tmax; Tmax &gt; +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position; Tmax &gt; +60 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 1 (no adjacent points) with horizontal mounting position -25 °C</li> <li>-40 °C 70 °C</li> <li>2 000 m</li> <li>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</li> </ul>

<ul> <li>With condensation, tested in accordance with IEC 60068-2-38, max.</li> </ul>	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Vibrations	
<ul> <li>Vibration resistance during operation acc. to IEC 60068-2-6</li> </ul>	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
<ul> <li>Operation, tested according to IEC 60068-2-6</li> </ul>	Yes
Shock testing	
<ul> <li>tested according to IEC 60068-2-27</li> </ul>	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Resistance	
Coolants and lubricants	
<ul> <li>Resistant to commercially available coolants and lubricants</li> </ul>	Yes; Incl. diesel and oil droplets in the air
Use in stationary industrial systems	
<ul> <li>— to biologically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
<ul> <li>— to chemically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *
<ul> <li>— to mechanically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
<ul> <li>— to biologically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
<ul> <li>— to chemically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *
<ul> <li>— to mechanically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6S3 incl. sand, dust; *
Usage in industrial process technology	
<ul> <li>Against chemically active substances acc. to EN 60654-4</li> </ul>	Yes; Class 3 (excluding trichlorethylene)
<ul> <li>Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04</li> </ul>	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	
<ul> <li>— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
<ul> <li>Coatings for printed circuit board assemblies acc. to EN 61086</li> </ul>	Yes; Class 2 for high reliability
<ul> <li>Protection against fouling acc. to EN 60664-3</li> </ul>	Yes; Type 1 protection
<ul> <li>Military testing according to MIL-I-46058C, Amendment 7</li> </ul>	Yes; Discoloration of coating possible during service life

## Ö PNAP

• 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	110 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	455 g
last modified:	10/13/2020

