## **SIEMENS**

## 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	
<ul> <li>Programming package</li> </ul>	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	
<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

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
<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	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	
• Number, max.	8 kbyte; Size of bit memory address area
Address area	
Process image	
<ul> <li>Inputs, adjustable</li> </ul>	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	
<ul> <li>Hardware clock (real-time)</li> </ul>	Yes

Backup time	480 h; Typical
<ul> <li>Deviation per day, max.</li> </ul>	±60 s/month at 25 °C
· · ·	
Digital inputs	44 laboursed
Number of digital inputs	14; Integrated
<ul> <li>of which inputs usable for technological functions</li> </ul>	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	
• 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	
<ul> <li>with resistive load, max.</li> </ul>	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	

<ul> <li>shielded, max.</li> </ul>	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
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
<ul> <li>Resolution with overrange (bit including sign),</li> </ul>	10 bit
max.	
<ul> <li>Integration time, parameterizable</li> </ul>	Yes
<ul> <li>Conversion time (per channel)</li> </ul>	625 μs
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
<ul> <li>Resolution with overrange (bit including sign),</li> </ul>	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
PROFINET IO Device	Yes; Also simultaneously with IO-Device functionality
PROFINET IO Controller	

Supports protocol for PROFINET IO     Yes       PROFIBUS     Yes; CM 1243-5 required       AS-Interface     Yes       Protocols (Ethernet)     Yes       • TCP/IP     Yes       Open IE communication     Yes       • TCP/IP     Yes       • UDP     Yes       • Usor-offined websites     Yes       Further protocols     Yes       • MODBUS     Yes       Sommunication functions     Yes       Status/control     Yes       • supported     Yes       • as server     Yes       • as client     Yes       Number of connections     Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters       Status/control     Yes       • Variables     Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters       Forcing     Yes       Diagnostic buffer     Yes       • present     Yes       Traces	Services	
PROFINET IO Device         Yes           Services         Yes           - Number of IO Controllers with shared device, max.         2           Protocols         Yes           Supports protocol for PROFINET IO         Yes           PROFIBUS         Yes; CM 1243-5 required           AS-Interface         Yes           Protocols         Yes           Open Ecommunication         Yes           • TCP/IP         Yes           • UDP         Yes           • Suported         Yes           • sa server </td <td>— Number of connectable IO Devices, max.</td> <td>16</td>	— Number of connectable IO Devices, max.	16
Shared deviceYesNumber of IO Controllers with shared device, max.2Supports protocol for PROFINET IOYesPROFIBUSYes; CM 1243-5 requiredAS-InterfaceYesProtocols (Ethernet)YesTCP/IPYesTCP/IPYesOpen IE communicationYesTCP/IPYesShared mebbraYesShared mebbraYes <trr>Shared mebbraYes&lt;</trr>	PROFINET IO Device	
Number of IO Controllers with shared device, max.         2           Protocols         Yes           Supports protocol for PROFINET IO         Yes (XM 1243-5 required           AS-Interface         Yes (XM 1243-5 required           AS-Interface         Yes           Protocols (Ethernet)         Yes           TCP/IP         Yes           Open IE communication         Yes           TCP/IP         Yes           ISO-on-TCP (RFC1006)         Yes           UDP         Yes           Very object         Yes           Supported         Yes           USP         Yes           Very object         Yes           USP         Yes           Very object         Yes           Very object         Yes           Very object         Yes           Statischon functions         Yes           Statischont functions         Yes           Statischontrol         Yes           Very object         Yes           Number of connections         Yes           Statischontrol variable         Yes           Variables         Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters           Forcing         Yes </td <td>Services</td> <td></td>	Services	
device, max.           Protocols           Supports protocol for PROFINET IO         Yes           PROFIBUS         Yes; CM 1243-5 required           AS-Interface         Yes           Protocols (Ethernet)         Yes           • TCP/IP         Yes           Open IE communication         Yes           • TCP/IP         Yes           • Supports (RFC1006)         Yes           • UDP         Yes           • UDP         Yes           • USo-on-TCP (RFC1006)         Yes           • UDP         Yes           • UDP         Yes           • UDP         Yes           • USer-defined websites         Yes           • User-defined websites         Yes           • USer-defined websites         Yes           • ODBUS         Yes           Oronnulcation functions         Yes           Statusconton functions         Yes           • soconnissioning functions         Yes           Verall         Yes           • as client         Yes           • orerall         Yes           • orerall         Yes           • orerall         Yes           • Status/control variables	— Shared device	Yes
Protocols           Supports protocol for PROFINET IO         Yes           PROFIBUS         Yes; CM 1243-5 required           AS-Interface         Yes           Protocols (Ethernet)         Yes           - TCP/IP         Yes           Open IE communication         Yes           - UDP         Yes           Open IE communication         Yes           - UDP         Yes           - Supported         Yes           - Supported         Yes           - UDR         Yes           - MODBUS         Yes           - MODBUS         Yes           - Supported         Yes           - as server         Yes           - as server         Yes           - as server         Yes           - overall         16; dynamically           - overall         Yes           - Status/control variable         Yes           - Variables		2
Supports protocol for PROFINET IO     Yes       PROFIBUS     Yes; CM 1243-5 required       AS-Interface     Yes       Protocols (Ethernet)     Yes       • TCP/IP     Yes       Open IE communication     Yes       • TCP/IP     Yes       • UDP     Yes       • Usor-offined websites     Yes       Further protocols     Yes       • MODBUS     Yes       Sommunication functions     Yes       Status/control     Yes       • supported     Yes       • as server     Yes       • as client     Yes       Number of connections     Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters       Status/control     Yes       • Variables     Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters       Forcing     Yes       Diagnostic buffer     Yes       • present     Yes       Traces	device, max.	
PROFIBUSYes; CM 1243-5 requiredAS-InterfaceYesProtocols (Ethernet)Yes• TCP/IPYes• TCP/IPYes• ISO-on-TCP (RFC1006)Yes• UDPYesWeb serverYes• UDPYes• UDPYesWeb serverYes• UDPYes• UDPYesWeb serverYes• UDPYes• UDPYesWeb serverYes• USC-on-TCP (RFC1006)Yes• USE-defined websitesYes• USE-defined websitesYesFurther protocolsYesFurther protocolsYes• MODBUSYesOmmunication functionsYes• as serverYes• as clientYes• overall16; dynamically• overallYes• Status/control variableYes• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, countersForcingYesDiagnostic bufferYes• presentYesTracesYes Diagnostic buffer• Number of configurable TracesYes Diagnostic buffer	Protocols	
AS-Interface     Yes       Protocols (Ethernet)     Yes       • TCP/IP     Yes       • TCP/IP     Yes       • TCP/IP     Yes       • ISO-on-TCP (RFC1006)     Yes       • UDP     Yes       • UDP     Yes       • UDP     Yes       • USP-on-TCP (RFC1006)     Yes       • UDP     Yes       • UDP     Yes       Web server     Yes       • User-defined websites     Yes       • USer-defined websites     Yes       • USer-defined websites     Yes       • UDP     Yes       • ODDBUS     Yes       • ODDBUS     Yes       • MODBUS     Yes       • Status/control     Yes       • overall     16 dynamically       • overall     Yes       • Status/control variable     Yes       • Variables     Input Soutputs, memory bits, DBs, distributed I/Os, timers, counters       Forcing     Yes       Diagnostic buffer     Yes       • present     Yes       Traces     Yes Totene possible <td>Supports protocol for PROFINET IO</td> <td>Yes</td>	Supports protocol for PROFINET IO	Yes
Protocols (Ethernet)         Yes           Open IE communication         Ves           • TCP/IP         Yes           • TCP/IP         Yes           • SUD-on-TCP (RFC1006)         Yes           • UDP         Yes           • Web server         Yes           • supported         Yes           • UDP         Yes           • User-defined websites         Yes           Further protocols         Yes           • MODBUS         Yes           Communication functions         Yes           Communication functions         Yes           Status/control         Yes           • as server         Yes           • as server         Yes           • overall         16; dynamically           • overall         16; dynamically           • status/control variable         Yes           • Variables         Input/soutputs, memory bits, DBs, distributed I/Os, timers, counters           Forcing         Yes           Piscontrol         Yes           Piscontrol         Yes           Piscontrol         Yes           Piscontrol         Yes           Piscontrol         Yes           Piscontrol	PROFIBUS	Yes; CM 1243-5 required
• TCP/IPYesOpen IE communication• TCP/IPYes• ISO-on-TCP (RFC1006)Yes• UJDPYesWeb server• UJDPYes• SupportedYes• User-defined websitesYesFurther protocolsYes• MODBUSYesCommunication functionsYesStatisformYesStatisformYes• SupportedYes• supportedYes• as serverYes• as clientYesNumber of connectionsYesStatus/control variableYes• Status/control variableYes• VariablesYesForcingYesForcingYes• ForcingYesDiagnostic bufferYes• presentYesTraces2: Up to 512 KB of data per trace are possible	AS-Interface	Yes
Open IE communication         Yes                • TCP/IP             • ISO-on-TCP (RFC1006)             • UDP             Yes          Yes                 • UDP             Yes          Yes                 • Supported             • User-defined websites          Yes                 • Supported             • User-defined websites          Yes                 • MODBUS          Yes                 • Supported             • Sa server             • Yes          Yes                 • sa client          Yes                 • overail          16; dynamically                 • overail          Yes                 • Variables          Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters                 Forcing          Yes                 • Variables          Yes            In	Protocols (Ethernet)	
• TCP/IPYes• ISO-on-TCP (RFC1006)Yes• UDPYesWeb serverYes• supportedYes• User-defined websitesYesFurther protocolsYes• MODBUSYesCommunication functionsYesS7 communicationYes• supportedYes• supportedYes• supportedYes• supportedYes• supportedYes• as clientYes• overallYes• overallYes• Status/control variableYes• Status/control variableYes• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, countersForcingYes• ForcingYesDiagnostic bufferYes• presentYesTraces2; Up to 512 KB of data per trace are possible	• TCP/IP	Yes
• ISO-on-TCP (RFC1006)Yes• UDPYesWeb serverYes• supportedYes• User-defined websitesYesFurther protocolsYes• MODBUSYes <b>Communication functions</b> YesS7 communicationYes• supportedYes• as serverYes• as clientYesNumber of connectionsYes• overall16; dynamically• overall16; dynamically• Status/controlInputs/outputs, memory bits, DBs, distributed I/Os, timers, countersForcingYes• ForcingYes• ForcingYes• presentYes• presentYes <td>Open IE communication</td> <td></td>	Open IE communication	
UDPYesWeb serverYes• supportedYes• User-defined websitesYesFurther protocolsYes• MODBUSYescommunication functionsYesS7 communicationYes• supportedYes• as serverYes• as clientYesNumber of connectionsYes• overall16; dynamically• overallYes• Status/controlInputs/outputs, memory bits, DBs, distributed I/Os, timers, countersForcingYes• ForcingYesDiagnostic bufferYes• presentYesTraces2; Up to 512 KB of data per trace are possible	• TCP/IP	Yes
Veb server         • supported       Yes         • User-defined websites       Yes         Further protocols       Yes         • MODBUS       Yes         communication functions       Yes         Sommunication       Yes         own server       Yes         • MODBUS       Yes         Communication functions       Yes         Sommunication       Yes         • supported       Yes         • as server       Yes         • as client       Yes         Number of connections       Yes         • overall       16; dynamically         * est commissioning functions       Yes         Status/control       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         Traces       2; Up to 512 KB of data per trace are possible	<ul> <li>ISO-on-TCP (RFC1006)</li> </ul>	Yes
• supportedYes• User-defined websitesYesFurther protocolsYes• MODBUSYescommunication functionsYesS7 communicationYes• supportedYes• as serverYes• as clientYesNumber of connectionsYes• overall16; dynamically• overallYes• Status/controlYes• Status/control variableYes• VariablesInputs/outputs, memory bits, DBs, distributed I/Os, timers, countersForcingYes• presentYes• presentYesTraces2; Up to 512 KB of data per trace are possible	• UDP	Yes
• User-defined websites       Yes         Further protocols       Yes         • MODBUS       Yes         communication functions       Yes         communication       Yes         • supported       Yes         • as server       Yes         • as client       Yes         Number of connections       Yes         • overall       16; dynamically         fest commissioning functions       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         • Variables       Yes         Diagnostic buffer       ves         • present       Yes         Number of configurable Traces       2; Up to 512 KB of data per trace are possible	Web server	
Further protocols         • MODBUS       Yes         communication functions         \$7 communication         • supported       Yes         • as server       Yes         • as client       Yes         Number of connections       Yes         • overall       16; dynamically         * Status/control       Yes         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         Number of configurable Traces       2; Up to 512 KB of data per trace are possible	• supported	Yes
• MODBUS       Yes         communication functions       S7 communication         • supported       Yes         • as server       Yes         • as client       Yes         Number of connections       Yes         • overall       16; dynamically         • overall       16; dynamically         • overall       Yes         • overall       Yes         • overall       Yes         • overall       16; dynamically         • overall       Yes         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         Diagnostic buffer       Ves         • present       Yes         Traces       2; Up to 512 KB of data per trace are possible	User-defined websites	Yes
Communication functions         S7 communication         • supported       Yes         • as server       Yes         • as client       Yes         Number of connections       Yes         • overall       16; dynamically         rest commissioning functions       Status/control         Status/control       Yes         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         Inactions       Yes         Diagnostic buffer       Yes         • Number of configurable Traces       2; Up to 512 KB of data per trace are possible	Further protocols	
S7 communication       Yes         • supported       Yes         • as server       Yes         • as client       Yes         Number of connections       Yes         • overall       16; dynamically         rest commissioning functions       Status/control         Status/control       Yes         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         Traces       Yes         • Number of configurable Traces       2; Up to 512 KB of data per trace are possible	• MODBUS	Yes
S7 communication       Yes         • supported       Yes         • as server       Yes         • as client       Yes         Number of connections       Yes         • overall       16; dynamically         rest commissioning functions       Status/control         Status/control       Yes         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         Traces       Yes         • Number of configurable Traces       2; Up to 512 KB of data per trace are possible	Communication functions	
• as server       Yes         • as client       Yes         Number of connections       16; dynamically         • overall       16; dynamically         rest commissioning functions       16; dynamically         Status/control       16; dynamically         • Status/control variable       Yes         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         • Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         • number of configurable Traces       2; Up to 512 KB of data per trace are possible	S7 communication	
• as client       Yes         Number of connections       16; dynamically         • overall       16; dynamically         • overall       Yes         • status/control       Variables         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         • Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         Traces       Yes         • Number of configurable Traces       2; Up to 512 KB of data per trace are possible	• supported	Yes
Number of connections       16; dynamically         • overall       16; dynamically         rest commissioning functions       Status/control         Status/control       Yes         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         • Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         Traces       Yes         • Number of configurable Traces       2; Up to 512 KB of data per trace are possible	• as server	Yes
• overall       16; dynamically         rest commissioning functions       Status/control         Status/control variable       Yes         • Status/control variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         • Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         • present       Yes         • Number of configurable Traces       2; Up to 512 KB of data per trace are possible	● as client	Yes
Fest commissioning functions         Status/control         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         • Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         Traces       2; Up to 512 KB of data per trace are possible	Number of connections	
Status/control       Yes         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         • Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         Traces       2; Up to 512 KB of data per trace are possible	• overall	16; dynamically
Status/control       Yes         • Status/control variable       Yes         • Variables       Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters         Forcing       Yes         • Forcing       Yes         Diagnostic buffer       Yes         • present       Yes         Traces       2; Up to 512 KB of data per trace are possible	Test commissioning functions	
<ul> <li>Variables</li> <li>Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters</li> <li>Forcing</li> <li>Forcing</li> <li>Yes</li> <li>Diagnostic buffer</li> <li>o present</li> <li>Yes</li> <li>Yes</li> <li>Traces</li> <li>Yus</li> <li>Yes</li> <li>Yes</li> </ul>		
counters       Forcing     Yes       o Forcing buffer     Yes       o present     Yes       Traces     Yes       • Number of configurable Traces     2; Up to 512 KB of data per trace are possible	Status/control variable	Yes
• Forcing     Yes       Diagnostic buffer     Yes       • present     Yes       Traces     2; Up to 512 KB of data per trace are possible	• Variables	
• Forcing     Yes       Diagnostic buffer     Yes       • present     Yes       Traces     2; Up to 512 KB of data per trace are possible	Forcing	
Diagnostic buffer     • present     Yes       Traces     • Number of configurable Traces     2; Up to 512 KB of data per trace are possible		Yes
Present Yes Traces Vumber of configurable Traces 2; Up to 512 KB of data per trace are possible		
• Number of configurable Traces       2; Up to 512 KB of data per trace are possible		Yes
Number of configurable Traces     2; Up to 512 KB of data per trace are possible		
ntegrated Functions		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
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction	Up to 4 with SB 1222
interface	
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
<ul> <li>between the channels</li> </ul>	No
<ul> <li>between the channels, in groups of</li> </ul>	2
EMC	
Interference immunity against discharge of static electric	city
<ul> <li>Interference immunity against discharge of static electricity acc. to IEC 61000-4-2</li> </ul>	Yes
— 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 IEC 61000-4-4</li> </ul>	Yes
<ul> <li>Interference immunity on signal cables acc. to IEC 61000-4-4</li> </ul>	Yes
Interference immunity against voltage surge	
<ul> <li>Interference immunity on supply lines acc. to IEC 61000-4-5</li> </ul>	Yes
Interference immunity against conducted variable distur	bance induced by high-frequency fields
<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	
• 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	IP20
Ambient conditions	
Free fall	

• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min. • max.	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 60 °C; = Tmax; Tmax > +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2, analog outputs 2 (no adjacent points) with horizontal mounting position
• At cold restart, min.	-25 °C
Ambient temperature during storage/transportation	40.40
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	2 000 m
<ul> <li>Installation altitude above sea level, max.</li> <li>Ambient air temperature-barometric pressure- altitude</li> </ul>	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); above 2 000 m max. 132 V AC
Relative humidity	
<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); *
— to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *

Usage in industrial process technology	
<ul> <li>Against chemically active substances acc.</li> <li>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
<ul> <li>Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	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:	05/15/2020