## 6AG1215-1HG40-5XB0

## **Data sheet**



SIPLUS S7-1200 CPU 1215C DC/DC/relay based on 6ES7215-1HG40-0XB0 with conformal coating, -40...+60 °C, start up -25 °C, compact CPU, DC/DC/relay, 2 PROFINET ports, onboard I/O: 14 DI 24 V DC; 10 DQ relay 2 A; 2 AI 0-10 V DC, power supply: DC 20.4-28.8 V DC, program/data memory 125 KB

Figure similar

Product type designation CPU 1215C DC/DC/relay  Firmware version V4.1  • STEP 7 TIA Portal configurable/integrated from version  Supply voltage  Rated value (DC)  • 24 V DC  permissible range, lower limit (DC)  • permissible range, upper limit (DC)  •	General information	
Engineering with  • STEP 7 TIA Portal configurable/integrated from version  Supply voltage  Rated value (DC)  • 24 V DC  permissible range, lower limit (DC)  permissible range, upper limit (DC)  • 28.8 V  Load voltage L+  • Rated value (DC)  • permissible range, lower limit (DC)  • permissible range, lower limit (DC)  • permissible range, upper limit (DC)  • permissible range, upper limit (DC)  • permissible range, lower limit (DC)  • permissible range, upper limit (DC)  • permissi	Product type designation	CPU 1215C DC/DC/relay
STEP 7 TIA Portal configurable/integrated from version  Supply voltage  Rated value (DC)  24 V DC  Permissible range, lower limit (DC)  Permissible range, upper limit (DC)  Power loss  Inrush current  Current consumption (rated value)  S00 mA; CPU only  Current consumption, max.  1 500 mA; CPU with all expansion modules  Inrush current, max.  12 A; at 28.8 V DC  Encoder supply  24 V encoder supply  24 V encoder supply  22 V L+ minus 4 V DC min.  Power loss  Power loss, typ.  12 W  Memory  Work memory  integrated  No  Load memory  integrated  Plug-in (SIMATIC Memory Card), max.  With SIMATIC memory card  Backup  Present  Present  Present  Yes; maintenance-free  without battery  CPU processing times  for bit operations, typ.  0.085 µs; / instruction  1.7 µs; / instruction	Firmware version	V4.1
version  Supply voltage Rated value (DC)  • 24 V DC  permissible range, lower limit (DC)  • 28.8 V  Load voltage L+  • Rated value (DC)  • permissible range, upper limit (DC)  permissible range, lower limit (DC)  • Partiesible range, lower limit (DC)  • Partiesible range, lower limit (DC)  • permissible range, upper limit (DC)  • permissible range, upper limit (DC)  • permissible range, lower limit (DC)  • permissible range, lower limit (DC)  • permissible range, lower limit (DC)  • permissible range, upper limit (DC)  • permissible range, upper limit (DC)  • 250 V  Input current  Current consumption (rated value)  • 500 mA; CPU only  Current consumption, max.  1 500 mA; CPU with all expansion modules  Inrush current, max.  1 2 A, at 28.8 V DC  Encoder supply  24 V encoder supply  • 24 V  • L+ minus 4 V DC min.  Power loss  Power loss, typ.  12 W  Memory  Work memory  • integrated  • expandable  • expandable  • expandable  • expandable  • expandable  • plug-in (SIMATIC Memory Card), max.  Backup  • present  • present  • without battery  CPU processing times  for bit operations, typ.  1.7 ps; / instruction  for word operations, typ.  1.7 ps; / instruction	Engineering with	
Rated value (DC)  • 24 V DC  permissible range, lower limit (DC)  permissible range, upper limit (DC)  28.8 V  Load voltage L+  • Rated value (DC) • permissible range, lower limit (DC)  permissible range, lower limit (DC)  • permissible range, lower limit (DC)  • permissible range, lower limit (DC)  permissible range, upper limit (DC)  permis	version	see entry ID: 109746275
emissible 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) 55 V  permissible range, lower limit (DC) 55 V  permissible range, upper limit (DC) 250 V  Input current  Current consumption (rated value) 500 mA; CPU only  Current consumption, max. 1500 mA; CPU with all expansion modules  Inrush current, max. 12 A; at 28.8 V DC  Encoder supply  24 V encoder supply  24 V	Supply voltage	
permissible range, lower limit (DC)  permissible range, upper limit (DC)  Load voltage L+  Rated value (DC)  permissible range, lower limit (DC)  power loss  Power toonsumption, max.  power loss  Power loss  Power loss, typ.  present power loss, typ.  present present present present present power loss, typ. power loss, t	Rated value (DC)	
permissible range, upper limit (DC)  Load voltage L+  • Rated value (DC) • permissible range, lower limit (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • permissible range, upper limit (DC) • permissible range, upper limit (DC)  Input current  Current consumption (rated value)  Current consumption (rated value)  Current consumption, max.  1 500 mA; CPU only  Lay at 28.8 V DC  Encoder supply  24 V encoder supply  24 V encoder supply  • 24 V  L+ minus 4 V DC min.  Power loss  Power loss, typ.  12 W  Memory  • integrated • integrated • expandable  No  Load memory • integrated • Plug-in (SIMATIC Memory Card), max.  Backup • present • present • without battery  for bit operations, typ.  for bit operations, typ.  0.085 µs; / instruction  1.7 µs; / instruction	• 24 V DC	Yes
Load voltage L+  • Rated value (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC)  • permissible range, upper limit (DC)  Input current  Current consumption (rated value)  Current consumption, max.  1 500 mA; CPU only  Current consumption, max.  1 500 mA; CPU with all expansion modules  Inrush current, max.  12 A; at 28.8 V DC  Encoder supply  24 V encoder supply  • 24 V	permissible range, lower limit (DC)	20.4 V
■ Rated value (DC) ■ permissible range, lower limit (DC) ■ permissible range, upper limit (DC)  ■ permissible range, upper limit (DC)  Input current  Current consumption (rated value)  Current consumption, max.  1 500 mA; CPU only  Current consumption, max.  1 1500 mA; CPU with all expansion modules  Inrush current, max.  12 A; at 28.8 ∨ DC  Encoder supply  24 ∨ encoder supply  ■ 24 ∨ L+ minus 4 ∨ DC min.  Power loss  Power loss, typ.  12 W  Memory  Work memory  ■ integrated ■ 100 kbyte ■ expandable No  Load memory  ■ integrated ■ 4 Mbyte ■ Plug-in (SIMATIC Memory Card), max.  Backup ■ present ■ yes; maintenance-free ● without battery  CPU processing times  for bit operations, typ.  0.085 μs; / instruction  for word operations, typ.  1.7 μs; / instruction	permissible range, upper limit (DC)	28.8 V
• permissible range, lower limit (DC)     • permissible range, upper limit (DC)     • permissible range, upper limit (DC)  Input current  Current consumption (rated value)  Current consumption, max.  1 500 mA; CPU only  Current consumption, max.  1 2 A; at 28.8 V DC  Encoder supply  24 V encoder supply  • 24 V  L+ minus 4 V DC min.  Power loss  Power loss, typ.  12 W  Memory  Work memory  • integrated • expandable  • expandable  No  Load memory  • integrated • Plug-in (SIMATIC Memory Card), max.  Backup  • present • without battery  for bit operations, typ.  10 0.85 µs; / instruction  1.7 µs; / instruction  1.7 µs; / instruction	Load voltage L+	
• permissible range, upper limit (DC)  Input current  Current consumption (rated value)  Current consumption, max.  1 500 mA; CPU only  Current consumption, max.  1 500 mA; CPU with all expansion modules  Inrush current, max.  1 2 A; at 28.8 V DC  Encoder supply  24 V encoder supply  24 V encoder supply  Power loss  Power loss  Power loss, typ.  12 W  Memory  Work memory  integrated  expandable  No  Load memory  integrated  Plug-in (SIMATIC Memory Card), max.  Backup  present  with out battery  Yes; maintenance-free  without battery  for bit operations, typ.  0.085 µs; / instruction  1.7 µs; / instruction  1.7 µs; / instruction	<ul> <li>Rated value (DC)</li> </ul>	24 V
Input current Current consumption (rated value) Current consumption, max.  1 500 mA; CPU with all expansion modules Inrush current, max.  12 A; at 28.8 V DC  Encoder supply 24 V encoder supply  • 24 V  L+ minus 4 V DC min.  Power loss Power loss, typ.  12 W  Memory  Work memory  • integrated • expandable No  Load memory  • integrated • Plug-in (SIMATIC Memory Card), max.  Backup • present • without battery  • without battery  for bit operations, typ.  500 mA; CPU only  1 500 mA; CPU with all expansion modules  1 2 W X  1 2 W X  A W DC min.  Power loss  1 2 W  Memory  4 Mbyte • expandable No  4 Mbyte • Plug-in (SIMATIC Memory Card), max.  Backup • present • without battery  Yes; maintenance-free • without battery  CPU processing times  for bit operations, typ.  1.7 µs; / instruction  1.7 µs; / instruction	<ul> <li>permissible range, lower limit (DC)</li> </ul>	5 V
Current consumption (rated value)  Current consumption, max.  Inrush current, max.  Inru	<ul> <li>permissible range, upper limit (DC)</li> </ul>	250 V
Current consumption, max.  Inrush current, m	Input current	
Inrush current, max.  Encoder supply  24 V encoder supply  • 24 V	Current consumption (rated value)	500 mA; CPU only
Encoder supply  24 V encoder supply  24 V = 24 V	Current consumption, max.	1 500 mA; CPU with all expansion modules
24 V encoder supply  • 24 V  L+ minus 4 V DC min.  Power loss  Power loss, typ.  12 W  Memory  Work memory  • integrated • expandable  Load memory  • integrated • Plug-in (SIMATIC Memory Card), max.  Backup  • present • without battery  CPU processing times  for bit operations, typ.  12 W  Memory  4 Mbyte  4 Mbyte  9 kithout battery  Yes; maintenance-free  Yes  CPU processing times  for word operations, typ.  1.7 µs; / instruction	Inrush current, max.	12 A; at 28.8 V DC
• 24 V L+ minus 4 V DC min.  Power loss  Power loss, typ.  Memory  Work memory  • integrated • expandable  No  Load memory  • integrated • Plug-in (SIMATIC Memory Card), max.  Backup • present • without battery  Pressing times  for bit operations, typ.  but the minus 4 V DC min.  12 W  Memory  100 kbyte  100 kbyte  4 Mbyte  No  4 Mbyte  9 Present 9 with SIMATIC memory card  Yes; maintenance-free  Yes; maintenance-free  100 kbyte  100 k	Encoder supply	
Power loss, typ.  Power loss, typ.  12 W  Memory  Work memory  integrated expandable No  Load memory  integrated Plug-in (SIMATIC Memory Card), max.  Backup eyresent eyresent ewithout battery  Processing times  for bit operations, typ.  12 W  Memory  4 Mbyte  4 Mbyte  4 Mbyte  4 Mbyte  4 Mbyte  9 Ptug-in (SIMATIC Memory Card), max.  With SIMATIC memory card  Yes; maintenance-free Yes  CPU processing times  for bit operations, typ.  0.085 µs; / instruction  1.7 µs; / instruction	24 V encoder supply	
Power loss, typ.  Memory  Work memory  integrated expandable  Load memory integrated Plug-in (SIMATIC Memory Card), max.  Backup epresent epresent ewithout battery  CPU processing times  for bit operations, typ.  12 W  12 W  Memory  100 kbyte No  100 kbyte No  4 Mbyte Ves; maintenance-free Yes; maintenance-free Yes  CPU processing times  100 kbyte No  100 kbyte No	• 24 V	L+ minus 4 V DC min.
Memory  Work memory  integrated expandable  No  Load memory  integrated Plug-in (SIMATIC Memory Card), max.  Backup epresent epresent ewithout battery  CPU processing times  for bit operations, typ. for word operations, typ.  1.7 µs; / instruction	Power loss	
Work memory  integrated  expandable  Load memory  integrated  Plug-in (SIMATIC Memory Card), max.  with SIMATIC memory card  Backup  present  without battery  CPU processing times  for bit operations, typ.  0.085 µs; / instruction  1.7 µs; / instruction	Power loss, typ.	12 W
<ul> <li>integrated</li> <li>expandable</li> <li>No</li> <li>Load memory</li> <li>integrated</li> <li>Plug-in (SIMATIC Memory Card), max.</li> <li>with SIMATIC memory card</li> <li>Backup</li> <li>present</li> <li>without battery</li> <li>Yes; maintenance-free</li> <li>without battery</li> <li>CPU processing times</li> <li>for bit operations, typ.</li> <li>0.085 µs; / instruction</li> <li>for word operations, typ.</li> <li>1.7 µs; / instruction</li> </ul>	Memory	
<ul> <li>● expandable</li> <li>No</li> <li>Load memory</li> <li>● integrated</li> <li>● Plug-in (SIMATIC Memory Card), max.</li> <li>Backup</li> <li>● present</li> <li>● without battery</li> <li>CPU processing times</li> <li>for bit operations, typ.</li> <li>for word operations, typ.</li> <li>1.7 µs; / instruction</li> </ul>	Work memory	
Load memory  • integrated • Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card  Backup  • present • without battery  CPU processing times  for bit operations, typ.  for word operations, typ.  1.7 µs; / instruction	<ul><li>integrated</li></ul>	100 kbyte
<ul> <li>integrated</li> <li>Plug-in (SIMATIC Memory Card), max.</li> <li>Backup</li> <li>present</li> <li>without battery</li> <li>CPU processing times</li> <li>for bit operations, typ.</li> <li>for word operations, typ.</li> <li>1.7 µs; / instruction</li> <li>1.7 µs; / instruction</li> </ul>	• expandable	No
<ul> <li>Plug-in (SIMATIC Memory Card), max.</li> <li>Backup</li> <li>present</li> <li>without battery</li> <li>CPU processing times</li> <li>for bit operations, typ.</li> <li>for word operations, typ.</li> <li>1.7 µs; / instruction</li> <li>1.7 µs; / instruction</li> </ul>	Load memory	
Backup	<ul><li>integrated</li></ul>	4 Mbyte
<ul> <li>present</li> <li>without battery</li> <li>CPU processing times</li> <li>for bit operations, typ.</li> <li>for word operations, typ.</li> <li>1.7 μs; / instruction</li> </ul>	Plug-in (SIMATIC Memory Card), max.	with SIMATIC memory card
<ul> <li>without battery</li> <li>CPU processing times</li> <li>for bit operations, typ.</li> <li>for word operations, typ.</li> <li>1.7 μs; / instruction</li> </ul>	Backup	
CPU processing times         for bit operations, typ.       0.085 μs; / instruction         for word operations, typ.       1.7 μs; / instruction	• present	Yes; maintenance-free
for bit operations, typ. 0.085 µs; / instruction for word operations, typ. 1.7 µs; / instruction	<ul><li>without battery</li></ul>	Yes
for word operations, typ. 1.7 µs; / instruction	CPU processing times	
for word operations, typ. 1.7 µs; / instruction	for bit operations, typ.	0.085 μs; / instruction
	for word operations, typ.	
	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	
<ul><li>Number, max.</li></ul>	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	10 kbyte
Flag	
• Size, max.	8 kbyte; Size of bit memory address area
Address area	
Process image	
Inputs, adjustable	1 kbyte
<ul> <li>Outputs, adjustable</li> </ul>	1 kbyte
Hardware configuration	
Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
Time of day  Clock	
Hardware clock (real-time)	Yes
Backup time	480 h; Typical
Deviation per day, max.	±60 s/month at 25 °C
Digital inputs	
Number of digital inputs	14; Integrated
of which inputs usable for technological functions	6; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	14
Input voltage	
Rated value (DC)	24 V
• for signal "0"	5 V DC at 1 mA
• for signal "1"	15 V DC at 2.5 mA
Input current	
● for signal "1", typ.	1 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	V
— parameterizable	Yes
for technological functions	Voc. Single phase (2 of 400 kHz 9 2 of 20 kHz 4/55
— 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	.0,0010
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	
Switching frequency  • of the pulse outputs, with resistive load, max.	1 Hz
Switching frequency  • of the pulse outputs, with resistive load, max.  Relay outputs	1 Hz

North an of an arctic and arctic	
Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100 000
Cable length	F00
• shielded, max.	500 m 150 m
• unshielded, max.	150 III
Analog inputs	
Number of analog inputs	2
Input ranges	Vac
Voltage     Input reverse (reted values) valtages	Yes
Input ranges (rated values), voltages  • 0 to +10 V	Yes
— Input resistance (0 to 10 V)	≥100k ohms
Cable length	E 100K OHHIS
• shielded, max.	100 m; twisted and shielded
Analog outputs	Too III, tillotod alla olilotada
Number of analog outputs	2
Output ranges, current	
• 0 to 20 mA	Yes
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	10 bit
<ul> <li>Resolution with overlange (bit including sign), max.</li> <li>Integration time, parameterizable</li> </ul>	Yes
Conversion time (per channel)	625 µs
Analog value generation for the outputs	020 μ3
Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.	10 bit
	10 bit
Encoder Connectable encoders	
Connectable encoders	Yes
• 2-wire sensor  1. Interface	165
1. Interface	
	PROFINET
Interface type	PROFINET
Interface type Isolated	Yes
Interface type Isolated automatic detection of transmission rate	Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation	Yes Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing	Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types	Yes Yes Yes Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet)	Yes Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols	Yes Yes Yes Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller	Yes Yes Yes Yes Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device	Yes Yes Yes Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller	Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device	Yes Yes Yes Yes Yes Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max.	Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services	Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device  PROFINET IO Controller • Transmission rate, max.  Services — Number of connectable IO Devices, max.	Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device	Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services	Yes Yes Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality 100 Mbit/s
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max.	Yes Yes Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality  100 Mbit/s  16
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device,	Yes Yes Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality  100 Mbit/s  16  Yes 2
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max.	Yes Yes Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality  100 Mbit/s  16
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max.  Protocols Supports protocol for PROFINET IO PROFIsafe	Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality  100 Mbit/s  16  Yes 2
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max.  Protocols Supports protocol for PROFINET IO PROFIsafe PROFIBUS	Yes Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality  100 Mbit/s  16  Yes 2
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max.  Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface	Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality  100 Mbit/s  16  Yes 2
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max.  Protocols Supports protocol for PROFINET IO PROFISafe PROFIBUS AS-Interface Protocols (Ethernet)	Yes Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality  100 Mbit/s  16  Yes 2  Yes No Yes; CM 1243-5 required Yes
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max.  Protocols Supports protocol for PROFINET IO PROFISafe PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP	Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality  100 Mbit/s  16  Yes 2  Yes No Yes; CM 1243-5 required
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max.  PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max.  Protocols Supports protocol for PROFINET IO PROFISafe PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication	Yes Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality  100 Mbit/s  16  Yes 2  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max. PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max.  Protocols Supports protocol for PROFINET IO PROFISafe PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP	Yes Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality  100 Mbit/s  16  Yes 2  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Interface type Isolated automatic detection of transmission rate Autonegotiation Autocrossing Interface types • RJ 45 (Ethernet) Protocols • PROFINET IO Controller • PROFINET IO Device PROFINET IO Controller • Transmission rate, max. Services — Number of connectable IO Devices, max.  PROFINET IO Device Services — Shared device — Number of IO Controllers with shared device, max.  Protocols Supports protocol for PROFINET IO PROFISafe PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication	Yes Yes Yes Yes Yes Yes Yes Yes; Also simultaneously with IO-Device functionality  100 Mbit/s  16  Yes 2  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye

Web server	
• supported	Yes
User-defined websites	Yes
Further protocols	
MODBUS	Yes
communication functions / header	
S7 communication	
	Yes
• supported	Yes
as server	
• as client	Yes
Number of connections	40. dominionalis
overall	16; dynamically
Test commissioning functions	
Status/control	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
Forcing	Yes
Diagnostic buffer	
• present	Yes
Traces	
<ul> <li>Number of configurable Traces</li> </ul>	2; Up to 512 KB of data per trace are possible
ntegrated Functions	
Frequency measurement	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	Up to 4 with SB 1222
PID controller	Yes
Number of alarm inputs	4
Potential separation	
Potential separation digital inputs	
Potential separation digital inputs	500V AC for 1 minute
between the channels, in groups of	1
	1
Potential separation digital outputs	Deleve
Potential separation digital outputs	Relays
between the channels	No
between the channels, in groups of	2
EMC	
Interference immunity against discharge of static electricity	
<ul> <li>Interference immunity against discharge of static electricity acc. to IEC 61000-4-2</li> </ul>	Yes
<ul> <li>Test voltage at air discharge</li> </ul>	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 disturbance	e induced by high-frequency fields
Interference immunity against high-frequency radiation acc. to IEC 61000-4-6	Yes
Emission of radio interference acc. to EN 55 011	
Limit class A, for use in industrial areas	Yes; Group 1
Limit class B, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011
	and minto for class a according to Erroso 11
Degree and class of protection	

Ambient conditions	
Free fall	
Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C
• max.	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	40.00
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	2 000 m
Installation altitude above sea level, max.  Ambient six temperature becometric procesure.	2 000 m
<ul> <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	
With condensation, tested in accordance with IEC 60068-2-38, max.	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
Operation, tested according to IEC 60068-2-6	Yes
• tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak
Resistance	value), duration 11 ms
Coolants and lubricants	
Resistant to commercially available coolants	Yes; Incl. diesel and oil droplets in the air
and lubricants  Use in stationary industrial systems	red, mor. dieser and on dropieto in the air
to biologically active substances according to	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of
EN 60721-3-3  — to chemically active substances according to	fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52
EN 60721-3-3  — to mechanically active substances according to	(severity degree 3); * Yes; Class 3S4 incl. sand, dust, *
EN 60721-3-3	red, Glass 604 mor. Sana, dast,
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 or 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); $^{\star}$
<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)
Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04  Remark	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)
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	
<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
onfiguration / header	

configuration / programming / header	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
programming / cycle time monitoring / header	
<ul> <li>adjustable</li> </ul>	Yes
Dimensions	
Width	130 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	585 g