## Data sheet



Figure similar

SIPLUS S7-1200 CPU 1215C DC/DC/RLY -40 ... +60 DEGREES C WITH CONFORMAL COATING SIGNAL BOARD USEABLE BASED ON 6ES7215-1HG40-0XB0 . COMPACT CPU, DC/DC/RLY, 2 PROFINET PORT, ONBOARD I/O: 14 DI 24V DC; 10 DO RELAY 2A; 2 AI 0 - 10V DC, POWER SUPPLY: AC 20.4 - 28.8 V DC, PROGRAM/DATA MEMORY: 100 KB

General information	
Product type designation	CPU 1215C DC/DC/Relay
Firmware version	V4.1
Engineering with	
Programming package	STEP 7 V13 SP1 or higher
Display	
with display	No
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Load voltage L+	
Rated value (DC)	24 V
<ul><li>permissible range, lower limit (DC)</li></ul>	5 V
• 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.	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	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
<ul><li>without battery</li></ul>	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
ОВ	
• Number, max.	Limited only by RAM for code
Data areas and their retentivity	
retentive data area in total (incl. times, counters,	10 kbyte
flags), max.	
Flag	
Number, 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
<ul> <li>Deviation per day, max.</li> </ul>	+/- 60 s/month at 25 °C
Digital inputs	
Number of digital inputs	14; Integrated
<ul> <li>of which inputs usable for technological functions</li> </ul>	6; HSC (High Speed Counting)
integrated channels (DI)	14
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	
— parameterizable	Yes
for counter/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
integrated channels (DO)	10
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	

• "1" to "0", max.  Switching frequency  • of the pulse outputs, with resistive load, max.  Relay outputs  • Number of relay outputs  • Number of operating cycles, max.  Cable length  • shelded, max.  • unshielded, max.  * u	• "0" to "1", max.	10 ms; max.
of the pulse outputs, with resistive load, max.  Relay outputs     Number of relay outputs     Number of operating cycles, max.  Number of operating cycles, max.      on while ded, max.     on while ded, max.      on while ded, max.  Number of analog inputs     integrated channels (AI)  Input ranges     voltage     voltage     voltage     voltage  Number of analog outputs     integrated damanels (AI)  Input resistance (0 to 10 V)  Pes Input resistance (0 to 10 V)  Analog outputs     shielded, max.  100 m; twisted and shielded  Analog outputs     integrated channels (AO)  Output ranges, current     voltage    ves  Number of analog outputs     integrated channels (AO)  Output ranges, current     ves to 20 mA  Analog value generation  Integration and conversion time/resolution per channel     Resolution with overrange (bit including sign), max.  Integration time, parameterizable    ves     conversion time (per channel)  Encoder  Connectable encoders     veswire sensor  PROFINET  Ethernet  Isolated    Yes  automatic detection of transmission rate  Yes  Ves	• "1" to "0", max.	10 ms; max.
Relay outputs  Number of relay outputs Number of perating cycles, max.  Soo m shelded, max. Soo m shelded, max. Soo m  Analog Inputs  Number of analog inputs  Pyes Notage Political channels (AI) Political channels Politica	Switching frequency	
Number of relay outputs Number of operating cycles, max.    Solution	of the pulse outputs, with resistive load, max.	1 Hz
Number of operating cycles, max.  Cable length  • shielded, max. • unshielded, max.  • unshielded, max.  150 m   Analog inputs  Number of analog inputs  • Voltage  • Voltage  • Voltage  • Voltage  • Input ranges (rated values), voltages  • 0 to +10 V  • Input rasistance (0 to 10 V)  Cable length  • shielded, max.  100 m; twisted and shielded  Analog outputs  Number of analog outputs  • shielded, max.  100 m; twisted and shielded  Analog outputs  Number of analog outputs  2 integrated channels (AO)  2; 0 to 20 mA  Output ranges, current  • 0 to 20 mA  Analog value generation  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable  • Conversion time (per channel)  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable  • Conversion time (per channel)  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable  • Conversion time (per channel)  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable  • Conversion time (per channel)  • PROFINET  Physics  Ethernet  solated  7 yes  automatic detection of transmission rate	Relay outputs	
Cable length  • shielded, max.  • unshielded, max.  • unshielded, max.  Soo m  • unshielded, max.  Soo m  Input analog inputs  • Voltage  • Uo +10 V  • Input ranges (rated values), voltages  • 0 to +10 V  • Input resistance (0 to 10 V)  Cable length  • shielded, max.  100 m; twisted and shielded  Analog outputs  Number of analog outputs  2 integrated channels (AO)  2; 0 to 20 mA  Output ranges, current  • 0 to 20 mA  Analog value generation  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable  • Conversion time (per channel)  • Conversion time (per channel)  Encoder  Connectable encoders  • 2-wire sensor  Yes  Interface  Interface  Interface  Interface  Interface  PROFINET  Physics  Ethernet  Isolated  Yes  automatic detection of transmission rate  Yes	Number of relay outputs	10
Cable length  • shielded, max.  • unshielded, max.  • unshielded, max.  Soo m  • unshielded, max.  Soo m  Number of analog inputs  Integrated channels (AI)  Input ranges  • Voltage  • Voltage  • Voltage  • Votage  • Votage  • Input ranges (rated values), voltages  • 0 to +10 V  • Input ranges (rated values), voltages  • 0 to +10 V  • Input resistance (0 to 10 V)  Cable length  • shielded, max.  100 m; twisted and shielded  Analog outputs  Number of analog outputs  2 integrated channels (AO)  2 to 0 to 20 mA  Output ranges, current  • 0 to 20 mA  Yes  Analog value generation  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable  • Conversion time (per channel)  Encoder  Connectable encoders  • 2-wire sensor  Yes  Interface  Interface  Interface type  PROFINET  Physics  Ethernet  Isolated  Yes  automatic detection of transmission rate  Yes		mechanically 10 million, at rated load voltage 100 000
• shielded, max. • unshielded, max.  150 m  Analog inputs Number of analog inputs 2 integrated channels (AI) 2; 0 to 10V Input ranges • Voltage Input ranges (rated values), voltages • 0 to +10 V • Input resistance (0 to 10 V)  Cable length • shielded, max.  100 m; twisted and shielded  Analog outputs Number of analog outputs integrated channels (AO) 2; 0 to 20 mA  Ves  Analog value generation Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel)  Encoder  Connectable encoders • 2-wire sensor  Yes  Integrace Interface type PROFINET Physics Ethernet Isolated Yes  automatic detection of transmission rate Yes		
• unshielded, max. 150 m  Analog inputs  Number of analog inputs 2; 0 to 10V  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; 0 to 20 mA  Output ranges, current • 0 to 20 mA Yes  Analog value generation  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable Yes • Conversion time (per channel) 625 µs  Encoder  Connectable encoders • 2-wire sensor Yes  Interface type PROFINET Physics Ethernet  Isolated Yes  automatic detection of transmission rate Yes		500 m
Number of analog inputs  Number of analog inputs  integrated channels (AI)  integrated channels (AI)  integrated channels (AI)  input ranges  • Voltage  • Votage  input ranges (rated values), voltages  • 0 to +10 V  • Input resistance (0 to 10 V)  Cable length  • shielded, max.  100 m; twisted and shielded  Analog outputs  Number of analog outputs  2 integrated channels (AO)  2; 0 to 20 mA  Output ranges, current  • 0 to 20 mA  Analog value generation  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable  • Conversion time (per channel)  Encoder  Connectable encoders  • 2-wire sensor  Yes  1. Interface  Interface type  Physics  Isolated  Yes  automatic detection of transmission rate  Yes  automatic detection of transmission rate		150 m
Number of analog inputs  integrated channels (AI)  linput ranges  • Voltage  Input ranges (rated values), voltages  • 0 to +10 V  • Input resistance (0 to 10 V)  Cable length  • shielded, max.  100 m; twisted and shielded  Analog outputs  Number of analog outputs  2 integrated channels (AO)  Output ranges, current  • 0 to 20 mA  Analog value generation  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable  • Conversion time (per channel)  Encoder  Connectable encoders  • 2-wire sensor  Yes  1. Interface  Interface type  PROFINET  Physics  Isolated  Yes  automatic detection of transmission rate  Yes  Ethernet  Isolated		
integrated channels (AI) 2; 0 to 10V Input ranges  • Voltage Yes Input ranges (rated values), voltages  • 0 to +10 V Yes • Input resistance (0 to 10 V) Yes • Input resistance (0 to 10 V) 100 m; twisted and shielded  Analog outputs Number of analog outputs 2 integrated channels (AO) 2; 0 to 20 mA  Output ranges, current • 0 to 20 mA Yes  Analog value generation Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Conversion time (per channel) 625 µs  Encoder  Connectable encoders • 2-wire sensor Yes  Interface Interface Interface Interface Physics Ethernet Isolated Yes automatic detection of transmission rate Yes		
Input ranges		
• Voltage Input ranges (rated values), voltages  • 0 to +10 V • Input resistance (0 to 10 V) 2 100k ohms  Cable length • shielded, max. 100 m; twisted and shielded  Analog outputs Number of analog outputs 2 integrated channels (AO) 2; 0 to 20 mA  Output ranges, current • 0 to 20 mA  Analog value generation Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Conversion time (per channel)  Encoder  Connectable encoders • 2-wire sensor  Yes  Interface Interface type Physics Ethernet Isolated Isolated Isolated Interface type PROFINET Ethernet Isolated Isolated Isolated Interface type PROFINET Ethernet Isolated Isolated Interface type PROFINET Ethernet Isolated Interface type Inter		2; 0 to 10V
Input ranges (rated values), voltages  ● 0 to +10 V  ● Input resistance (0 to 10 V)  Cable length  ● shielded, max.  100 m; twisted and shielded  Analog outputs  Number of analog outputs  2 integrated channels (AO)  Output ranges, current  ● 0 to 20 mA  Analog value generation  Integration and conversion time/resolution per channel  ● Resolution with overrange (bit including sign), max.  ● Integration time, parameterizable  ● Conversion time (per channel)  Encoder  Connectable encoders  ● 2-wire sensor  Yes  1. Interface  Interface type  PROFINET  Physics  Ethernet  Isolated  automatic detection of transmission rate  Yes  automatic detection of transmission rate		V
• 0 to +10 V     • Input resistance (0 to 10 V)     ≥100k ohms  Cable length     • shielded, max.     100 m; twisted and shielded  Analog outputs  Number of analog outputs 2 integrated channels (AO)     Output ranges, current     • 0 to 20 mA  Analog value generation Integration and conversion time/resolution per channel     • Resolution with overrange (bit including sign), max.     • Integration time, parameterizable Yes     • Conversion time (per channel)  Encoder  Connectable encoders     • 2-wire sensor  Yes  Interface Interface type PROFINET Physics Ethernet Isolated automatic detection of transmission rate  Yes  automatic detection of transmission rate  Yes		Yes
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• shielded, max.  Analog outputs  Number of analog outputs  2 integrated channels (AO)  Output ranges, current  • 0 to 20 mA  Yes  Analog value generation  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable  • Conversion time (per channel)  Encoder  Connectable encoders  • 2-wire sensor  Yes  1. Interface  Interface type  PROFINET  Physics  Ethernet  Isolated  automatic detection of transmission rate  100 m; twisted and shielded  Analog value and shielded  2  The state of the state of the shielded and shielded  President and shielded  100 m; twisted and shielded  President a		≥100k ohms
Analog outputs  Number of analog outputs 2 integrated channels (AO) 2; 0 to 20 mA  Output ranges, current  • 0 to 20 mA  Yes  Analog value generation Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable • Conversion time (per channel)  Encoder  Connectable encoders  • 2-wire sensor  Yes  1. Interface Interface type PROFINET Physics Ethernet Isolated automatic detection of transmission rate  Yes		
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Output ranges, current  • 0 to 20 mA  Yes  Analog value generation  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable Yes  • Conversion time (per channel)  Encoder  Connectable encoders  • 2-wire sensor  Yes  1. Interface Interface type Physics Physics Ethernet Isolated Aves  Yes  automatic detection of transmission rate  Yes	Number of analog outputs	2
O to 20 mA     Yes  Analog value generation  Integration and conversion time/resolution per channel      Resolution with overrange (bit including sign), max.     Integration time, parameterizable Yes     Conversion time (per channel)  Encoder  Connectable encoders	integrated channels (AO)	2; 0 to 20 mA
Analog value generation  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration time, parameterizable Yes  • Conversion time (per channel) 625 µs  Encoder  Connectable encoders  • 2-wire sensor Yes  1. Interface Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes	Output ranges, current	
Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  Integration time, parameterizable Yes Conversion time (per channel)  Funcoder  Connectable encoders  2-wire sensor  Yes  Interface Interface type Physics Ethernet Isolated automatic detection of transmission rate  Yes	• 0 to 20 mA	Yes
<ul> <li>Resolution with overrange (bit including sign), max.</li> <li>Integration time, parameterizable Yes</li> <li>Conversion time (per channel)</li> <li>Encoder</li> <li>Connectable encoders</li> <li>2-wire sensor</li> <li>Yes</li> <li>Interface</li> <li>Interface type</li> <li>Physics</li> <li>Ethernet</li> <li>Isolated</li> <li>automatic detection of transmission rate</li> <li>Yes</li> </ul>	Analog value generation	
max.  • Integration time, parameterizable • Conversion time (per channel)  Encoder  Connectable encoders • 2-wire sensor  1. Interface Interface type Physics Ethernet Isolated automatic detection of transmission rate  Yes	Integration and conversion time/resolution per channel	
<ul> <li>Integration time, parameterizable</li> <li>Conversion time (per channel)</li> <li>Encoder</li> <li>Connectable encoders</li> <li>2-wire sensor</li> <li>Yes</li> <li>1. Interface</li> <li>Interface type</li> <li>Physics</li> <li>Ethernet</li> <li>Isolated</li> <li>automatic detection of transmission rate</li> <li>Yes</li> </ul>	<ul> <li>Resolution with overrange (bit including sign),</li> </ul>	10 bit
Conversion time (per channel)      Encoder     Connectable encoders	max.	
Encoder  Connectable encoders  • 2-wire sensor  Yes  1. Interface Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate  Yes	<ul> <li>Integration time, parameterizable</li> </ul>	Yes
Connectable encoders  • 2-wire sensor  1. Interface Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes	<ul><li>Conversion time (per channel)</li></ul>	625 µs
● 2-wire sensor  1. Interface Interface type PROFINET Physics Ethernet Isolated Yes  automatic detection of transmission rate Yes	Encoder	
1. Interface Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes	Connectable encoders	
Interface type PROFINET  Physics Ethernet  Isolated Yes  automatic detection of transmission rate Yes	• 2-wire sensor	Yes
Physics Ethernet  Isolated Yes automatic detection of transmission rate Yes	1. Interface	
Isolated Yes automatic detection of transmission rate Yes	Interface type	PROFINET
automatic detection of transmission rate  Yes	Physics	Ethernet
	Isolated	Yes
Autonegotiation Yes	automatic detection of transmission rate	Yes

Functionality  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 PROFIDE  PROFIDE  PROFIDE  PROFIDE  PROFIDE  TCPIP  TCPIP  Further protocols  MODBUS  Communication functions  7 communication  Syrocommunication  Syrocommunication  Protocols  Pr	Autocrossing	Yes
PROFINET IO Device PROFINET IO Controller  Transmission rate, max.  100 Mbit/s  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 PROFINET S  Supports protocol for PROFINET IO TCPIP Tuther protocols  Wes  Communication functions  S7 communication  S7 communication  TCPIP Yes a client Yes  Open IE communication  TCPIP Yes SIGN 1-243-5 required  Yes  Communication  Yes  Communication  Yes  Communication  Yes  Open IE communication  TCPIP Yes  Upported Yes Sign 1-243-5 required  Yes  Protocols  Yes  Communication functions  S7 communication  Yes  Yes  Sa client Yes  Open IE communication  TCPIP Yes Sign 1-243-5 required  Yes  Yes  Ves  Communication functions  S7 communication  Yes  Yes  Sa client Yes  Open IE communication  Yes  Upp  Yes  Ves  Upp  Web server  Supported Yes  Uper-defined websites Yes  Number of connections  Ves  Ves  Upser-defined websites  Yes  Number of connections  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	Functionality	
PROFINET IO Controller  In transmission rate, max. Services  — Number of connectable IO Devices, max.  PROFINET IO Device  Services  — Shared device — Number of IO Controllers with shared device, max.  Protocols  Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) ITCPIP Yes Further protocols  I MODBUS Yes  Communication functions  S7 communication S7 communication I CP/IP Sa server Sa sclient Yes  Open IE communication I CP/IP Yes  Web server  I Usported Yes  Ves  Web server  Supported Yes Supported Suppo	PROFINET IO Controller	Yes
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 Yes PROFIBUS AS-Interface Protocols (Ethernet)  - TCPIP Yes Further protocols  • MODBUS Yes  Communication functions  S7 communication  • supported • as server • as client  • TCP/IP  Yes  Open IE communication  • TCP/IP  Yes  Ves  Web server  • supported • TCP/IP  Yes  SIQO-n-TCP (RFC1006) • UDP Yes  Ves  Ves  Ves  Ves  Ves  Ves  Ves	PROFINET IO Device	Yes; Also simultaneously with IO-Device functionality
Services	PROFINET IO Controller	
- Number of connectable IO Devices, max.  PROFINET IO Device  Services  - Shared device - Number of IO Controllers with shared device, max.  Protocools  Supports protocol for PROFINET IO PROFIBUS AS-Interface Yes Protocols (Ethernet)  • TCP/IP • Truther protocols • MODBUS  Communication functions  S7 communication • supported • as server • as client • as client  Open IE communication • TCP/IP  • ISO-on-TCP (RFC1006) • UDP  Wes  Number of connections  • overall  16; dynamically  Test commissioning functions  Status/control • Status/control variable • Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	Transmission rate, max.	100 Mbit/s
PROFINET IO Device  Services  — Shared device Yes — Number of IO Controllers with shared device, max.  Protocols  Supports protocol for PROFINET IO Yes PROFIBUS Yes; CM 1243-5 required  AS-Interface Yes Protocols (Ethernet)  • TCP/IP Yes  Further protocols • MODBUS Yes  Communication functions  S7 communication  • supported Yes • as server Yes • as client Yes  Open IE communication  • TCP/IP Yes  (ISO-on-TCP (RFC1006) Yes  • UDP Yes  Web server  • supported Yes  • ISO-on-TCP (RFC1006) Yes  • UDP Yes  Web server  • supported Yes  • IO-on-TCP (RFC1006) Yes  • UDP Yes  Web server  • supported Yes  • Supported Yes  • Supported Yes  • UDP Yes  Web server  • supported Yes  • Supported Yes  • UDP Yes  Web server  • supported Yes  • UDP Yes  Web server  • supported Yes  • UDP Yes  Number of connections  • overall 16; dynamically  Test commissioning functions  Status/control  • Status/control variable Yes  • Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	Services	
Services	— Number of connectable IO Devices, max.	16
Shared device Number of IO Controllers with shared device, max.  Protocols  Supports protocol for PROFINET IO Yes PROFIBUS AS-Interface Yes Protocols (Ethernet) TCP/IP Yes TCP/IP Yes Wes	PROFINET IO Device	
Number of IO Controllers with shared device, max.  Protocols  Supports protocol for PROFINET IO Yes PROFIBUS Yes; CM 1243-5 required  AS-Interface Yes Protocols (Ethernet)  • TCP/IP Yes  Further protocols  • MODBUS Yes  Communication functions  S7 communication  • supported Yes  • as server Yes  • as client Yes  Open IE communication  • TCP/IP Yes  Ves  Web server  • supported Yes  • ISO-on-TCP (RFC1006) Yes  • UDP Yes  Web server  • supported Yes  • Supported Yes  • ISO-on-TCP (RFC1006) Yes  • UDP Yes  Web server  • supported Yes  • Supported Yes  • User-defined websites Yes  Number of connections  • overall 16; dynamically  Test commissioning functions  Status/control variable  • Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	Services	
Protocols  Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Futher protocols • MODBUS  Communication functions S7 communication • supported • as server • as client • TCP/IP  Pes • ISO-on-TCP (RFC1006) • UDP  Web server • supported • User-defined websites • Ves  Number of connections  Status/control • Status/control variable • Variables • Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	— Shared device	Yes
Supports protocol for PROFINET IO PROFIBUS Yes; CM 1243-5 required AS-Interface Yes Protocols (Ethernet) • TCP/IP Yes Further protocols • MODBUS Yes  Communication functions S7 communication • supported • as server • as client  • TCP/IP Yes  Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Yes  Web server • supported • User-defined websites Number of connections • overall  Test commissioning functions Status/control • Status/control variable • Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters		2
PROFIBUS  AS-Interface  Protocols (Ethernet)  TCP/IP  Yes  Further protocols  MODBUS  Yes  Communication functions  S7 communication  supported  as server  as client  Open IE communication  TCP/IP  Yes  ISO-on-TCP (RFC1006)  UDP  Web server  supported  Yes  Yes  Web server  Supported  Yes  Injunts/outputs, memory bits, DBs, distributed I/Os, timers, counters	Protocols	
AS-Interface Yes  Protocols (Ethernet)  • TCP/IP Yes  Further protocols  • MODBUS Yes  Communication functions  \$7 communication functions  \$7 communication	Supports protocol for PROFINET IO	Yes
Protocols (Ethernet)  • TCP/IP  • TCP/IP  Further protocols  • MODBUS  Yes  Communication functions  \$7 communication functions  \$7 communication  • supported  • as server  • as client  Open IE communication  • TCP/IP  • ISO-on-TCP (RFC1006)  • UDP  Yes  Web server  • supported  • yes  Ves  Ves  Ves  Ves  Ves  Ves  In display the following functions  Status/control  • Status/control  • Status/control variable  • Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	PROFIBUS	Yes; CM 1243-5 required
Test communication functions  Further protocols  MODBUS  Yes  Communication functions  S7 communication  Syported Sypor	AS-Interface	Yes
Further protocols  • MODBUS  Yes  Communication functions  S7 communication  • supported  • supported  • as server  • as client  Open IE communication  • TCP/IP  • ISO-on-TCP (RFC1006)  • UDP  Yes  Web server  • supported  • Supported  • Ves  Number of connections  • overall  Test commissioning functions  Status/control  • Status/control  • Status/control variable  • Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	Protocols (Ethernet)	
MODBUS  Yes  Communication functions  S7 communication  • supported • as server • as client  Open IE communication  • TCP/IP • ISO-on-TCP (RFC1006) • UDP  Web server  • supported • Supp	• TCP/IP	Yes
Communication functions  \$7 communication  • supported • as server • as client  Open IE communication  • TCP/IP • ISO-on-TCP (RFC1006) • UDP  Web server  • supported • User-defined websites  Number of connections • overall  Test commissioning functions  Status/control • Status/control variable • Variables  I yes  I yes  I yes  I puts/outputs, memory bits, DBs, distributed I/Os, timers, counters	Further protocols	
S7 communication  • supported • as server • as client  Open IE communication  • TCP/IP • ISO-on-TCP (RFC1006) • UDP  Web server • supported • Supported • User-defined websites  Ves  Number of connections • overall  Test commissioning functions  Status/control • Status/control variable • Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	• MODBUS	Yes
supported     as server     as client  Open IE communication      TCP/IP     Yes     ISO-on-TCP (RFC1006)     Ves     UDP     Yes  Web server      supported     Ves     User-defined websites  Number of connections     overall  Test commissioning functions  Status/control  Status/control  Status/control  Yes  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	Communication functions	
as server     as client     Yes     as client  Open IE communication      TCP/IP     Yes     ISO-on-TCP (RFC1006)     Yes     UDP     Yes  Web server     supported     Ves     User-defined websites  Number of connections     overall  Test commissioning functions  Status/control  Status/control  Status/control variable     Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	S7 communication	
as client  Open IE communication  TCP/IP  ISO-on-TCP (RFC1006)  UDP  Yes  Web server  supported  User-defined websites  Number of connections  overall  Test commissioning functions  Status/control  Status/control variable  Ves  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	• supported	Yes
Open IE communication  • TCP/IP • ISO-on-TCP (RFC1006) • UDP  Web server • supported • User-defined websites  Number of connections • overall  Test commissioning functions  Status/control • Status/control variable • Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	• as server	Yes
TCP/IP  ISO-on-TCP (RFC1006)  Ves  UDP  Yes  Web server  Supported  User-defined websites  Number of connections  overall  Test commissioning functions  Status/control  Status/control  Yes  Ves  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	• as client	Yes
ISO-on-TCP (RFC1006)	Open IE communication	
Ves  Web server      supported     User-defined websites  Number of connections     overall  Test commissioning functions  Status/control  Status/control variable     Ves  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	• TCP/IP	Yes
Web server	• ISO-on-TCP (RFC1006)	Yes
<ul> <li>supported</li> <li>User-defined websites</li> <li>Yes</li> <li>Number of connections</li> <li>overall</li> <li>16; dynamically</li> <li>Test commissioning functions</li> <li>Status/control</li> <li>Status/control variable</li> <li>Variables</li> <li>Yes</li> <li>Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters</li> </ul>	• UDP	Yes
<ul> <li>User-defined websites</li> <li>Number of connections</li> <li>overall</li> <li>16; dynamically</li> <li>Test commissioning functions</li> <li>Status/control</li> <li>Status/control variable</li> <li>Variables</li> <li>Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters</li> </ul>	Web server	
Number of connections  • overall  16; dynamically  Test commissioning functions  Status/control  • Status/control variable  • Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	• supported	Yes
overall  Test commissioning functions  Status/control  Status/control variable  Variables  Variables  16; dynamically  Yes  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	<ul> <li>User-defined websites</li> </ul>	Yes
Test commissioning functions  Status/control  • Status/control variable  • Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	Number of connections	
Status/control  Status/control variable  Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	• overall	16; dynamically
Status/control      Status/control variable     Variables  Variables  Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	Test commissioning functions	
<ul> <li>Variables</li> <li>Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters</li> </ul>		
counters	Status/control variable	Yes
Forcing	Variables	
	Forcing	

• Forcing	Yes
Diagnostic buffer	
• present	Yes
Traces	
Number of configurable Traces	2; Up to 512 KB of data per trace are possible
-	
Integrated Functions	
Number of counters	6
Counting frequency (counter) max.	100 kHz
Frequency meter	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
<ul> <li>between the channels, in groups of</li> </ul>	1
Potential separation digital outputs	
Potential separation digital outputs	Relays
• between the channels	No
• between the channels, in groups of	2
EMC	
Interference immunity against discharge of static electri	city
Interference immunity against discharge of	Yes
static electricity acc. to IEC 61000-4-2	
<ul> <li>Test voltage at air discharge</li> </ul>	8 kV
<ul> <li>Test voltage at contact discharge</li> </ul>	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	
• on the supply lines acc. to IEC 61000-4-5	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 of protection acc. to EN 60529	
• IP20	Yes
tandards, approvals, certificates	
CE mark	Yes
mbient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-40 °C; = Tmin; Startup @ -25 °C
• max.	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
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Vibrations	
<ul> <li>Vibrations</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 test	
• tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Extended ambient conditions	
<ul> <li>relative to ambient temperature-atmospheric pressure-installation altitude</li> </ul>	Tmin Tmax at 1080 hPa 795 hPa (-1000 m +2000 m) // Tmin (Tmax - 10K) at 795 hPa 658 hPa (+2000 m +3500 m) // Tmin (Tmax - 20K) at 658 hPa 540 hPa (+3500 m +5000 m)
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)
Resistance	
<ul> <li>against biologically active substances / conformity with EN 60721-3-3</li> </ul>	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
<ul> <li>against chemically active substances / conformity with EN 60721-3-3</li> </ul>	Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector cover must remain on the unused interfaces during operation!
<ul> <li>against mechanically active substances / conformity with EN 60721-3-3</li> </ul>	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!

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.	585 g