## **SIEMENS**

## Data sheet

6ES7214-1AG40-0XB0

SIMATIC S7-1200, CPU 1214C, compact CPU, DC/DC/DC, onboard I/O: 14 DI 24 V DC; 10 DO 24 V DC; 2 AI 0-10 V DC, Power supply: DC 20.4-28.8V DC, Program/data memory 100 KB



General information	
Product type designation	CPU 1214C DC/DC/DC
Firmware version	V4.2
Engineering with	
Programming package	STEP 7 V14 or higher
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Load voltage L+	
• Rated value (DC)	24 V
<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V
• permissible range, upper limit (DC)	28.8 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
l²t	0.5 A²·s
Output current	
for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
Encoder supply	
24 V encoder supply	L
• 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
• Plug-in (SIMATIC Memory Card), max.	with SIMATIC memory card
Backup	
• present	Yes
• maintenance-free	Yes
• without battery	Yes
CPU processing times	
for bit operations, typ.	0.08 µs; / instruction
for word operations, typ.	1.7 μs; / instruction
for floating point arithmetic, typ.	2.3 µs; / instruction
CPU-blocks	
Number of blocks (total)	DBs, FCs, FBs, counters and timers. The maximum number of
	addressable blocks ranges from 1 to 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),	10 kbyte
max.	
Flag	
Number, max.	8 kbyte; Size of bit memory address area
Local data	46 librator Driggity close 4 (and areas problem 40 l/D and all the last
<ul><li>per priority class, max.</li></ul>	16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB
Address area	
Process image	

Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
Hardwara configuration	
Hardware configuration  Number of modules per system, max.	3 comm. modules, 1 signal board, 8 signal modules
reamber of modules per system, max.	o donim. modules, i signal board, o 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	
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	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	Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 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
<ul><li>of which high-speed outputs</li></ul>	4; 100 kHz Pulse Train Output
Limitation of inductive shutdown voltage to	L+ (-48 V)
Switching capacity of the outputs	
• with resistive load, max.	0.5 A

• on lamp load, max.	5 W
Output voltage	
● for signal "0", max.	0.1 V; with 10 kOhm load
• for signal "1", min.	20 V
Output current	
● for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.1 mA
Output delay with resistive load	
• "0" to "1", max.	1 µs
• "1" to "0", max.	5 µs
Switching frequency	
• of the pulse outputs, with resistive load, max.	100 kHz
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	
Voltage	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
<ul><li>Input resistance (0 to 10 V)</li></ul>	≥100k ohms
Cable length	
• shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	0
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign),	10 bit
max.	
<ul> <li>Integration time, parameterizable</li> </ul>	Yes
<ul> <li>Conversion time (per channel)</li> </ul>	625 µs
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Physics	
-	Ethernet
Isolated automatic detection of transmission rate	Yes Yes

Autocrossing Yes Interface types  • Number of ports   1 • integrated switch   No Functionality  • PROFINET IO Controller   Yes • PROFINET IO Device   Yes • SiMATIC communication   Yes • SiMATIC communication   Yes • Web server   Yes • Media redundancy   No PROFINET IO Controller • Transmission rate, max.   100 Mbit/s  Services  - PC/OP communication   Yes - Simatic startup   Yes - IRT   No - MRPD   No - PROFinergy   No - PROFilerergy   No - Prioritized startup   Yes - Number of IO devices with prioritized startup, max.   16 - Number of connectable IO Devices, max.   16 - Number of connectable IO Devices, max.   16 - Number of Connectable IO Devices for RT, max.   16 - Activation/deactivation of IO Devices   Yes - Number of IO Devices that can be simultaneously activated/deactivated, max.   16 - Activation/deactivation of IO Devices   Yes - Number of IO Devices that can be simultaneously activated/deactivated, max.   17 - Updating time   The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services - PC/OP communication   Yes - Sochronous mode   No - Open IE communication   Yes	Autonegotiation	Yes
Interface types  • Number of ports • Integrated switch  Finctionality  • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Web server • Media redundancy • Media redundancy  PROFINET IO Controller • Transmission rate, max.  Services  - PG/OP communication - S7 routing - Isochronous mode - Open IE communication - Web - MRP - MRP - MRP - MRP - MRPD - PROFILerry - Prioritized startup - Profiler of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max of which in line, max Of which in line, max Updating time  PROFINET IO Device  Services  - PG/OP communication - The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services  - PG/OP communication - S7 routing - S7 routing - S7 routing - S8 rou		
Number of ports  Integrated switch  No  Functionality  PROFINET IO Controller  PROFINET IO Device  SIMATIC communication  Open IE communication  PSorvices  PG/OP communication  PSorvices  PG/OP communication  PSOR IE communication  PROFINET IO Controller  PROFILE communication  PSOR IE communication  If Communication  PSOR IE communication		163
Integrated switch  Functionality  PROFINET IO Controller PROFINET IO Device ID PROFINET ID PROFINET ID PROFINET		1
Functionality  PROFINET IO Device Yes PROFINET IO Device Yes SIMATIC communication Yes Open IE communication Yes Media redundancy No PROFINET IO Controller Transmission rate, max. 100 Mbit/s  Services  — PG/OP communication Yes — Isochronous mode No — Open IE communication Yes — IRT No — MRP No — PROFInergy No — PROFIlerargy No — Prioritized startup Yes — Number of IO devices with prioritized startup, max.  — Number of connectable IO Devices, max.  — Number of connectable IO Devices for RT, max.  — Of which in line, max. — Activation/deactivation of IO Devices Yes — Number of IO Devices that can be simultaneously activated/deactivated, max. — Updating time  PROFINET IO Device  Services  — PG/OP communication Yes  — S7 routing Yes — S7 routing Yes — S7 routing Yes — S7 routing Yes — S7 routing Yes — S7 routing Yes — S7 routing Yes — S7 routing Yes — S7 routing Yes — S7 routing Yes — S7 routing Yes — S7 routing Yes — S7 routing Yes — S7 routing Yes	·	
PROFINET IO Controller PROFINET IO Device SIMATIC communication Yes Open IE communication Yes Media redundancy No  PROFINET IO Controller Transmission rate, max. 100 Mbit/s  Services PG/OP communication Yes No PROFINET IO Controller Transmission rate, max. 100 Mbit/s  Services PG/OP communication Yes Sorvices PG/OP communication Yes Isochronous mode No Open IE communication Yes IRT No MRP No MRP No PROFINET IO devices with prioritized startup, max. Number of IO devices with prioritized startup, max. Number of connectable IO Devices, max. Number of tonnectable IO Devices for RT, max. Of which in line, max. Activation/deactivation of IO Devices No No PROFINET IO Device  Services PPOFONET IO Device  Services PPOFONET IO Device  Services PPOFOP Communication Yes Services PROFOP Communication No		
PROFINET IO Device SIMATIC communication Yes Open IE communication Web server Media redundancy No PROFINET IO Controller  Transmission rate, max. 100 Mbit/s  Services  PG/OP communication Yes Services  PG/OP communication Yes Isochronous mode Open IE communication Yes INT No No No PROFINET IO Controller  PG/OP communication Yes Isochronous mode No Open IE communication Yes No PROFINET Open IE communication Yes No PROFINET Open IE communication IRT No No PROFINET Open IE communication PROFINET Open IE communication INT No No No PROFINET IO Devices with prioritized If Int No No No Int No		Yes
SIMATIC communication Open IE communication Yes Web server Media redundancy No  PROFINET IO Controller  Transmission rate, max.  100 Mbit/s  Services  PG/OP communication Yes - S7 routing - Isochronous mode - Open IE communication - IRT - MRP - MRP - MRP - MRPD - PROFinergy - No - Prioritized startup - Number of IO devices with prioritized startup, max.  Number of connectable IO Devices, max Number of IO Devices that can be simultaneously activated/deactivated, max Updating time  PROFINET IO Device  Services  PG/OP communication  Yes - PG/OP communication  Yes - The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services - PG/OP communication - S7 routing - S7 routing - Isochronous mode  No		
Open IE communication  Web server  Media redundancy  PROFINET IO Controller  Transmission rate, max.  Services		
Web server     Media redundancy     No  PROFINET IO Controller      Transmission rate, max.  Services  - PG/OP communication - S7 routing - Isochronous mode - Open IE communication - IRT - MRP - MRP - MRPD - PROFIenergy - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max Updating time  PROFINET IO Device  Services  - PG/OP communication - S7 routing - S7 routing - S7 routing - Isochronous mode  100 Mbit/s  Yes - Number of IO devices - Number of IO devices of RT, max The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services - PG/OP communication - S7 routing - S7 routing - S7 routing - Isochronous mode		
Media redundancy  PROFINET IO Controller  Transmission rate, max.  Services  - PG/OP communication - S7 routing - Isochronous mode - Open IE communication - IRT - MRP - MRP - MRP - MRPD - PROFIenergy - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of which in line, max of which in line, max Of which in line, max Updating time  PROFINET IO Device  Services  - PG/OP communication  Yes - No - PROFINET IO Device - S7 routing - S7 routing - S7 routing - Isochronous mode  No - Ves - No - S7 routing - S7 routing - Isochronous mode  No - No - S7 routing - S7 routing - Isochronous mode  Yes - No - S7 routing - S7 routing - S7 routing - Isochronous mode  Yes - Sarvices - Services - PG/OP communication - S7 routing - Isochronous mode  Yes - Sarvices - Services - Services - Services - Services - Services - S7 routing - Isochronous mode - S0	•	
PROFINET IO Controller  ● Transmission rate, max.  Services  — PG/OP communication Yes — S7 routing Yes — Isochronous mode No — Open IE communication Yes — IRT No — MRP No — MRPD No — PROFInergy No — Prioritized startup Yes — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — A Activation/deactivation of IO Devices Yes — Number of IO Devices that can be simultaneously activated/deactivated, max. — Updating time  PROFINET IO Device  Services  — PG/OP communication Yes — S7 routing Yes — Isochronous mode  100 Mbit/s  100 Mitherity  100 Mbit/s  100 Mitherity  100 Mit		No
• Transmission rate, max.  Services  - PG/OP communication Yes - S7 routing Yes - Isochronous mode No - Open IE communication Yes - IRT No - MRP No - MRPD No - PROFINET IO Device  - Number of IO devices since that can be simultaneously activated/deactivated, max Updating time - PROFINET IO Device  Services - PG/OP communication Yes - PG/OP communication Of Ves - PG/OP communication Of Ves - PG/OP communication Yes - PG/OP communication Yes - S7 routing - S7 routing - S7 routing - S7 routing - So routing - S7 routing - S7 routing - S0 routing - S7 routing - S0 routing - S7 routing - S0 routing	-	
Services  - PG/OP communication Yes - S7 routing Yes - Isochronous mode No - Open IE communication Yes - IRT No - MRP No - MRPD No - PROFINET IO Device Services - PG/OP communication - S7 routing Yes - PG- No - PROFINET IO Devices mode - No - PROFINET IO Devices mode - PROFINET IO Devices mode - S7 routing - PG- PROFINET IO Devices mode - S7 routing - S7 routing - S0 routing - PROFINET IO Devices mode - S7 routing - S7 routing - S0 routing - S		100 Mbit/s
- PG/OP communication Yes - S7 routing Yes - Isochronous mode No - Open IE communication Yes - IRT No - MRP No - MRPD No - PROFINET IO Devices - Number of Configured user data.  PROFINET IO Devices Services - PG/OP communication - S7 routing - S6 Services - Number of Contended IO Device No - S7 routing - S7 routing - S7 routing - S6 No - No - No - S7 routing - S6 Roo - No - S7 routing		
S7 routing Yes Isochronous mode No Open IE communication Yes IRT No MRP No MRPD No PROFINET IO Device Services PG/OP communication S7 routing Yes No S7 routing Yes No S7 routing Yes No No S7 routing Yes No S7 routing Yes No -		Yes
- Isochronous mode - Open IE communication - IRT - MRP - MRP - MRPD - No - PROFlenergy - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max of which in line, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max Updating time - The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device - Services - PG/OP communication - S7 routing - Isochronous mode - No		
Open IE communication Yes IRT No MRP No MRPD No PROFlenergy No Prioritized startup Yes Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max of which in line, max of which in line, max Activation/deactivation of IO Devices Yes Number of IO Devices that can be simultaneously activated/deactivated, max Updating time The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services PG/OP communication Yes S7 routing Yes Isochronous mode		No
- IRT No - MRP - MRPD No - PROFlenergy No - Prioritized startup Yes - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max of which in line, max of which in line, max Activation/deactivation of IO Devices Yes - Number of IO Devices that can be simultaneously activated/deactivated, max Updating time - The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services - PG/OP communication Yes - S7 routing Yes - Isochronous mode No		Yes
- MRP - MRPD - MRPD - PROFlenergy - Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max of which in line, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max Updating time - The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services - PG/OP communication - S7 routing - Isochronous mode - No		
- MRPD No - PROFlenergy No - Prioritized startup Yes - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max of which in line, max of which in line, max Activation/deactivation of IO Devices Yes - Number of IO Devices that can be simultaneously activated/deactivated, max Updating time - The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services - PG/OP communication Yes - S7 routing Yes - Isochronous mode No		No
PROFIlenergy Prioritized startup Prioritized startup Number of IO devices with prioritized startup, max. Number of connectable IO Devices, max. Number of connectable IO Devices for RT, max. Number of connectable IO Devices for RT, max. Of which in line, max. Activation/deactivation of IO Devices Number of IO Devices that can be simultaneously activated/deactivated, max. Updating time The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services  PG/OP communication Yes Isochronous mode No		
- Prioritized startup - Number of IO devices with prioritized startup, max Number of connectable IO Devices, max Number of connectable IO Devices for RT, max Number of connectable IO Devices for RT, max of which in line, max of which in line, max Activation/deactivation of IO Devices - Number of IO Devices that can be simultaneously activated/deactivated, max Updating time - Updating time - The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device - PG/OP communication - S7 routing - Isochronous mode - No		No
Number of IO devices with prioritized startup, max.  Number of connectable IO Devices, max.  Number of connectable IO Devices for RT, max.  Of which in line, max.  of which in line, max.  Activation/deactivation of IO Devices  Number of IO Devices that can be simultaneously activated/deactivated, max.  Updating time  Updating time  Which in line, max is a second of IO Devices in the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services  PG/OP communication S7 routing Isochronous mode  Isochronous mode  Number of IO Devices in the communication of IO devices and the quantity of configured user data.  Number of IO devices and the quantity of configured user data.  Number of IO Device in the communication of IO devices and the quantity of configured user data.  PG/OP communication in Yes in the communication in the communication in Yes in the communication in the communication in Yes in the communication		
<ul> <li>Number of connectable IO Devices, max.</li> <li>Number of connectable IO Devices for RT, max.</li> <li>of which in line, max.</li> <li>Activation/deactivation of IO Devices</li> <li>Number of IO Devices that can be simultaneously activated/deactivated, max.</li> <li>Updating time</li> <li>The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.</li> </ul> PROFINET IO Device Services <ul> <li>PG/OP communication</li> <li>Yes</li> <li>S7 routing</li> <li>Isochronous mode</li> </ul> No	— Number of IO devices with prioritized	16
max.  — of which in line, max.  — Activation/deactivation of IO Devices  — Number of IO Devices that can be simultaneously activated/deactivated, max.  — Updating time  The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services  — PG/OP communication — S7 routing — Isochronous mode  No	Number of connectable IO Devices, max.	16
<ul> <li>Activation/deactivation of IO Devices</li> <li>Number of IO Devices that can be simultaneously activated/deactivated, max.</li> <li>Updating time</li> <li>The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.</li> <li>PROFINET IO Device</li> <li>Services</li> <li>PG/OP communication</li> <li>Yes</li> <li>S7 routing</li> <li>Isochronous mode</li> <li>No</li> </ul>		16
— Number of IO Devices that can be simultaneously activated/deactivated, max.  — Updating time  The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services  — PG/OP communication — S7 routing — Isochronous mode  8	— of which in line, max.	16
simultaneously activated/deactivated, max.  — Updating time  The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services  — PG/OP communication — S7 routing — Isochronous mode  No	<ul> <li>Activation/deactivation of IO Devices</li> </ul>	Yes
communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.  PROFINET IO Device  Services  - PG/OP communication - S7 routing - Isochronous mode  Yes No		8
Services  PG/OP communication Yes S7 routing Yes Isochronous mode No	— Updating time	communication component set for PROFINET IO, on the number
<ul> <li>— PG/OP communication</li> <li>— S7 routing</li> <li>— Isochronous mode</li> <li>Yes</li> <li>No</li> </ul>	PROFINET IO Device	
<ul><li>— S7 routing</li><li>— Isochronous mode</li><li>No</li></ul>	Services	
— Isochronous mode No	— PG/OP communication	Yes
	— S7 routing	Yes
— Open IE communication Yes	— Isochronous mode	No
	<ul> <li>Open IE communication</li> </ul>	Yes

— IRT	No
— MRP	No
— MRPD	No
— PROFlenergy	Yes
— Shared device	Yes
Number of IO Controllers with shared device, max.	2
401100, 111a/tt	

Protocols	
Supports protocol for PROFINET IO	Yes
PROFIBUS	Yes; CM 1243-5 required
AS-Interface	Yes; CM 1243-2 required
Protocols (Ethernet)	
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Open IE communication	
• TCP/IP	Yes
— Data length, max.	8 kbyte
• ISO-on-TCP (RFC1006)	Yes
— Data length, max.	8 kbyte
• UDP	Yes
— Data length, max.	1 472 byte
Web server	
User-defined websites	Yes
Further protocols	
• MODBUS	Yes
Communication functions	

Communication functions	
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes
<ul> <li>User data per job, max.</li> </ul>	See online help (S7 communication, user data size)
Web server	
• supported	Yes
Number of connections	
• overall	16; dynamically

Test commissioning functions	
Status/control	
Status/control variable	Yes

• Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
• Forcing	Yes
Diagnostic buffer	
• present	Yes
Traces	
Number of configurable Traces	2
<ul> <li>Memory size per trace, max.</li> </ul>	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
• RUN/STOP LED	Yes
• ERROR LED	Yes
• MAINT LED	Yes
Integrated 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	4; With integrated outputs
interface	V
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
Limit frequency (pulse)	100 kHz
Potential separation	
Potential separation digital inputs	
<ul> <li>Potential separation digital inputs</li> </ul>	No
• between the channels, in groups of	1
Potential separation digital outputs	
<ul> <li>Potential separation digital outputs</li> </ul>	Yes
<ul><li>between the channels</li></ul>	No
• between the channels, in groups of	1
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
<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 and class of protection	
Degree of protection acc. to EN 60529	
● IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	Yes
Ambient conditions	
Free fall	
● Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-20 °C
• max.	60 °C; Number of simultaneously activated inputs or outputs 7 or 5 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 14 or 10 at 55 °C horizontal or 45 °C vertical
<ul> <li>horizontal installation, min.</li> </ul>	-20 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-20 °C
• vertical installation, max.	50 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
Operation, min.	795 hPa
Operation, max.	1 080 hPa

Storage/transport, min.	660 hPa
Storage/transport, max.	1 080 hPa
Altitude during operation relating to sea level	, 555 iii <b>2</b>
Installation altitude, min.	-1 000 m
Installation altitude, max.	2 000 m
Relative humidity	- 000 111
Operation, max.	95 %; no condensation
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
Shock testing	
• tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Pollutant concentrations	
• SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
Configuration	
Programming	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Know-how protection	
User program protection/password protection	Yes
Copy protection	Yes
Block protection	Yes
Access protection	
Protection level: Write protection	Yes
<ul> <li>Protection level: Read/write protection</li> </ul>	Yes
<ul> <li>Protection level: Complete protection</li> </ul>	Yes
Cycle time monitoring	
• adjustable	Yes
Dimensions	
Width	110 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	415 g
last modified:	12/22/2017