6AG1215-1AF40-5XB0

Data sheet



SIPLUS S7-1200 CPU 1215FC DC/DC/DC based on 6ES7215-1AF40-0XB0 with conformal coating, -25...+55 °C, compact CPU, DC/DC/DC, 2 PROFINET ports, onboard I/O: 14 DI 24 V DC; 10 DQ 24 V DC 0.5 A; 2 AI 0-10 V DC, 2 AQ 0-20 mA DC, power supply: DC 20.4 - 28.8 V DC, program/data memory 150 KB

Product type designation Engineering with STEP 7 TIA Portal configurable/integrated from version Supply voltage Rated value (DC) 24 V DC Permissible range, lower limit (DC) 25 S V Permissible range, lower limit (DC) 24 V C Permissible range, lower limit (DC) 24 V C Permissible range, lower limit (DC) 25 S V Permissible range, upper limit (DC) Pour consumption, max. 1 500 mA; CPU only Current consumption, max. 1 500 mA; CPU only 1 500 m	General information	
**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) **permissible range, upper limit (DC) **permissible range, upper limit (DC) **permissible range, lower limit (DC) **permissible range, upper limit	Product type designation	CPU 1215FC DC/DC/DC
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, upper limit (DC) • permissible range, lower limit (DC) • permissible range, lower limit (DC) • permissible range, upper limit (DC) • 24 V Current consumption (rated value) • 12 A, at 28.8 V DC • 12	Engineering with	
Rated value (DC) • 24 V DC permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) 28.8 V Load voltage L+ • Rated value (DC) • permissible range, lower limit (DC) 5 V • permissible range, upper limit (DC) 5 V • permissible range, upper limit (DC) 5 V 5 V permissible range, upper limit (DC) 5 V permissible range, uper limit (DC) 6 V permissible		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) 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 If 0.5 A*s Output current for backplane bus (5 V DC), max. 1 600 mA; Max. 5 V DC for SM and CM Encodor supply 24 V encoder supply • 24 V • L+ minus 4 V DC min. Power loss Power loss, typ. 12 W Memory Work memory • integrated 150 kbyte • expandable No Load memory • integrated 4 Mbyte • expandable No Load memory • integrated 4 Mbyte • Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup • present Yes • maintenance-free Yes • maintenance-free Yes • maintenance-free Yes • without battery Yes for bit operations, typ. 0.085 µs; / instruction	Supply voltage	
permissible range, lower limit (DC) permissible range, upper limit (DC) 28.8 V Load voltage L+ • Rated value (DC) • permissible range, lower limit (DC) 5 V • permissible range, upper limit (DC) permissible range, upper limit (DC) 5 V • 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 12 A; at 28.8 V DC Input current Output current for backplane bus (5 V DC), max. 1 600 mA; Max. 5 V DC for SM and CM Encoder supply • 24 V L+ minus 4 V DC min. Power loss Power loss Power loss, typ. 12 W Memory • integrated • expandable No Load memory • integrated • Plug-in (SiMATIC Memory Card), max. Backup • present • present • maintenance-free • without battery CPU processing times for bit operations, typ. 0.085 µs; / instruction	Rated value (DC)	
permissible range, upper limit (DC) Load voltage L+ Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) 5 V pown limit and upper limit (DC) 5 V permissible range, upper limit (DC) 1	• 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) • permissible range, upper limit (DC) • permissible range, upper limit (DC) 250 V 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 Pt 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 • 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) 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 IPt Output current for backplane bus (5 V DC), max. 1 600 mA; Max. 5 V DC for SM and CM Encoder supply 24 V encoder supply 24 V Expansion with a V DC min. 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 present yes with out battery Yes CPU processing times for bit operations, typ. 0.085 µs; / instruction		28.8 V
• permissible range, lower 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. 12 A; at 28.8 V DC I²t 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 • 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 • maintenance-free • without battery CPU processing times for bit operations, typ. 0.085 µs; / instruction		
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Input current		
Current consumption (rated value) Current consumption, max. Inrush current, max. It is 28.8 V DC It is 28.8 V DC Output current for backplane bus (5 V DC), max. Inrush current for backplane bus (5 V DC), max. Inrush current for backplane bus (5 V DC), max. Inrush current for backplane bus (5 V DC), max. Inrush current for backplane bus (5 V DC), max. Inrush current for backplane bus (5 V DC), max. Inrush current for backplane bus (5 V DC), max. Inrush current for backplane bus (5 V DC), max. Inrush current Inrush cu		250 V
Current consumption, max. Inrush current, max. Inrush current, max. If 0.5 A²-s Output current for backplane bus (5 V DC), max. Inrush current In obout the content of the content		
Inrush current, max. It is a continuous current in the continuous continuous continuous card in the continuous ca		· ·
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 • 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. with SIMATIC memory card Backup • present • maintenance-free • without battery CPU processing times for bit operations, typ. 0.085 μs; / instruction		1 500 mA; CPU with all expansion modules
The state of the s	•	
for backplane bus (5 V DC), max. 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 Load memory • integrated • Plug-in (SIMATIC Memory Card), max. Backup • present • maintenance-free • without battery For bit operations, typ. 1 600 mA; Max. 5 V DC for SM and CM L+ minus 4 V DC min. Push in the standard or supplies and supplie	I ² t	0.5 A ² ·s
Encoder supply 24 V encoder supply • 24 V	Output current	
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 Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free without battery for bit operations, typ. L+ minus 4 V DC min. Ly W Ly W Ly W Ly Memory Power loss, typ.	for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
• 24 V L+ minus 4 V DC min. Power loss Power loss, typ. 12 W Memory Work memory • integrated 150 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. 0.085 µs; / instruction	Encoder supply	
Power loss Power loss, typ. 12 W Memory Work memory integrated 150 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. 0.085 µs; / instruction	24 V encoder supply	
Power loss, typ. Memory Work memory integrated expandable No Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free without battery CPU processing times for bit operations, typ.	• 24 V	L+ minus 4 V DC min.
Memory Work memory ● integrated 150 kbyte ● expandable No Load memory 4 Mbyte ● Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup Present ● present Yes ● maintenance-free Yes ● without battery Yes CPU processing times for bit operations, typ. 0.085 μs; / instruction	Power loss	
Work memory integrated expandable No Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free without battery CPU processing times for bit operations, typ. 150 kbyte 150 kbyte No 4 Mbyte With SIMATIC memory card Yes With SIMATIC memory card Yes Yes Yes Yes O.085 µs; / instruction	Power loss, typ.	12 W
 integrated expandable No Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free without battery CPU processing times for bit operations, typ. 150 kbyte No Whote Without A Mbyte With SIMATIC memory card Yes Yes Without battery Yes Without battery O.085 µs; / instruction 	Memory	
 expandable No Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free without battery CPU processing times for bit operations, typ. No No Yes with SIMATIC memory card Yes Yes Yes Without battery Yes O.085 µs; / instruction 	Work memory	
Load memory integrated Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup present maintenance-free without battery CPU processing times for bit operations, typ. 4 Mbyte Yes yes Yes Yes Yes Yes 0.085 µs; / instruction	• integrated	150 kbyte
 integrated Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup present maintenance-free without battery CPU processing times for bit operations, typ. 4 Mbyte with SIMATIC memory card Yes Yes O.085 µs; / instruction 	expandable	No
 Plug-in (SIMATIC Memory Card), max. Backup present maintenance-free without battery CPU processing times for bit operations, typ. with SIMATIC memory card Yes Yes Yes O.085 µs; / instruction 	Load memory	
Backup	•	4 Mbyte
 present maintenance-free without battery CPU processing times for bit operations, typ. Yes CPU processing times 0.085 µs; / instruction 	Plug-in (SIMATIC Memory Card), max.	with SIMATIC memory card
• maintenance-free	•	
● without battery CPU processing times for bit operations, typ. O.085 μs; / instruction	•	
CPU processing times for bit operations, typ. 0.085 µs; / instruction		
for bit operations, typ. 0.085 μs; / instruction	·	Yes
	CPU processing times	
for word operations, typ. 1.7 µs: / instruction	for bit operations, typ.	·
, or	for word operations, typ.	1.7 μs; / instruction

for floating point arithmetic, typ.	2.3 µs; / instruction
CPU-blocks	2.5 μs, / ποιτασιοίτ
Number of blocks (total)	DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used
OB	
Number, max.	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	10 kbyte
Flag	
• Size, max.	8 kbyte; Size of bit memory address area
Local data	
per priority class, max.	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
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 delay (for rated value of input voltage)	
for standard inputs	Voc. 0.2 mg 0.4 mg 0.9 mg 1.6 mg 2.2 mg 6.4 mg and 12.9 mg
— parameterizable	Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
for interrupt inputs	
— parameterizable	Yes
for technological functions	
— parameterizable	Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3
	@ 30 kHz
Cable length	FOO was FO we for to change of the first time.
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	0.4
with resistive load, max. an lamp load, max.	2 A
on lamp load, max. Output delay with registive load.	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. 10 ms; max.
Relay outputs	io iio, iliax.
Number of relay outputs	10
Number of relay outputs Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100 000
Cable length	modifically to million, at fated load voltage 100 000
shielded, max.	500 m
·	

• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	
 Voltage 	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
— Input resistance (0 to 10 V)	≥100k ohms
Cable length	
shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	2
Output ranges, current	
• 0 to 20 mA	Yes
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
 Resolution with overrange (bit including sign), max. 	10 bit
 Integration time, parameterizable 	Yes
Conversion time (per channel)	625 µs
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
 Resolution with overrange (bit including sign), max. 	10 bit
Encoder	
Connectable encoders	
2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Interface types	
 RJ 45 (Ethernet) 	Yes
 Number of ports 	2
integrated switch	Yes
Protocols	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
SIMATIC communication	Yes
Open IE communication	Yes
Web server Media redundancy	Yes
Media redundancy PROFINET IO Controller	Yes; as MRP client
Transmission rate, max.	100 Mbit/s
Services	100 maio
— PG/OP communication	Yes
— Isochronous mode	No
— IRT	No
— PROFlenergy	No
Prioritized startup	Yes
 Number of IO devices with prioritized startup, 	16
max.	
 Number of connectable IO Devices, max. 	16
 Number of connectable IO Devices for RT, max. 	16
— of which in line, max.	16
Activation/deactivation of IO Devices	Yes
Number of IO Devices that can be	8
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
DDOFINET IO Dovigo	devices and the quantity of configured user data.
PROFINET IO Device	

Services	Ver
— PG/OP communication	Yes
— Isochronous mode	No
— IRT	No
— PROFlenergy	Yes
— Shared device	Yes
 Number of IO Controllers with shared device, max. 	2
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIsafe	Yes
PROFIBUS	Yes; CM 1243-5 required
AS-Interface	Yes; CM 1243-2 required
Protocols (Ethernet)	100, OH 1210 210quilou
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Redundancy mode	
Media redundancy	
— MRP	Yes; as MRP client
— MRPD	No
SIMATIC communication	
S7 routing	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	V
supported	Yes
User-defined websites Further protocols	Yes
Further protocols	Yes
• MODRIE	
• MODBUS	1 65
communication functions / header	165
communication functions / header S7 communication	
communication functions / header S7 communication • supported	Yes
communication functions / header S7 communication • supported • as server	Yes Yes
communication functions / header S7 communication • supported • as server • as client	Yes Yes Yes
communication functions / header S7 communication • supported • as server • as client • User data per job, max.	Yes Yes
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections	Yes Yes Yes Yes See online help (S7 communication, user data size)
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall	Yes Yes Yes
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions	Yes Yes Yes Yes See online help (S7 communication, user data size)
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control	Yes Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable	Yes Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables	Yes Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing	Yes Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Yes
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer • present	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer • present Traces	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Yes Yes
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer • present Traces • Number of configurable Traces	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Yes Yes
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer • present Traces • Number of configurable Traces • Memory size per trace, max.	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Yes Yes
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer • present Traces • Number of configurable Traces • Memory size per trace, max. Integrated Functions	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Yes Yes Yes 2 512 kbyte
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer • present Traces • Number of configurable Traces • Memory size per trace, max. Integrated Functions Frequency measurement	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Yes Yes Yes Yes Yes
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer • present Traces • Number of configurable Traces • Memory size per trace, max. Integrated Functions Frequency measurement controlled positioning	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Yes Yes Yes Yes Yes Yes Yes
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer • present Traces • Number of configurable Traces • Memory size per trace, max. Integrated Functions Frequency measurement controlled positioning Number of position-controlled positioning axes, max.	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Yes Yes Yes Yes 2 512 kbyte Yes Yes 8
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer • present Traces • Number of configurable Traces • Memory size per trace, max. Integrated Functions Frequency measurement controlled positioning axes, max. Number of position-controlled positioning axes, max. Number of positioning axes via pulse-direction interface	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Yes Yes Yes Up to 4 with SB 1222
communication functions / header S7 communication • supported • as server • as client • User data per job, max. Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer • present Traces • Number of configurable Traces • Memory size per trace, max. Integrated Functions Frequency measurement controlled positioning Number of position-controlled positioning axes, max.	Yes Yes Yes See online help (S7 communication, user data size) 16; dynamically Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Yes Yes Yes Yes 2 512 kbyte Yes Yes 8

Potential separation	
Potential separation digital inputs	
Potential separation digital inputs	500V AC for 1 minute
between the channels, in groups of	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 electricity	
Interference immunity against discharge of static	Yes
electricity acc. to IEC 61000-4-2	
 Test voltage at air discharge 	8 kV
Test voltage at contact discharge	6 kV
Interference immunity to cable-borne interference	
 Interference immunity on supply lines acc. to IEC 61000-4-4 	Yes
 Interference immunity on signal cables acc. to IEC 61000-4-4 	Yes
Interference immunity against voltage surge	
 Interference immunity on supply lines acc. to IEC 61000-4-5 	Yes
Interference immunity against conducted variable disturbance	
Interference immunity against high-frequency radiation aga to IEC 61000 4.6.	Yes
radiation acc. to IEC 61000-4-6	
Emission of radio interference acc. to EN 55 011	Voc. Croup 1
Limit class A, for use in industrial areas Limit class B, for use in residential areas	Yes; Group 1 Ves: When appropriate measures are used to ensure compliance with
Limit class B, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011
Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
KC approval	Yes
Marine approval	Yes
Highest safety class achievable in safety mode	
Performance level according to ISO 13849-1	PLe
SIL acc. to IEC 61508	SIL 3
Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	05.00 T
• min.	-25 °C; = Tmin
• max.	55 °C; = Tmax
horizontal installation, min. horizontal installation, may	-25 °C; = Tmin
horizontal installation, max. vertical installation, min	55 °C; = Tmax
vertical installation, min.	-25 °C; = Tmin
vertical installation, max. Ambient temperature during storage/transportation.	45 °C; = Tmax
Ambient temperature during storage/transportation	-40 °C
min. max.	70 °C
Air pressure acc. to IEC 60068-2-13	10 0
Storage/transport, min.	660 hPa
Storage/transport, min. Storage/transport, max.	1 139 hPa
Altitude during operation relating to sea level	
Installation altitude above sea level, max.	2 000 m
Ambient air temperature-barometric pressure-	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m)
altitude	
Relative humidity	
With condensation, tested in accordance with IEC	100 %; incl. condensation / frost permitted (no commissioning under
60068-2-38, max.	condensation conditions)
Vibrations	
 Vibration resistance during operation acc. to IEC 60068-2-6 	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
Resistance	,
Coolants and lubricants	
 Resistant to commercially available coolants and lubricants 	Yes
Use in stationary industrial systems	
 to biologically active substances according to EN 60721-3-3 to chemically active substances according to EN 60724.3.3 	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of 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 EN 60721-3-3	(severity degree 3); * Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
 to chemically active substances according to EN 60721-3-6 	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
 to mechanically active substances according to EN 60721-3-6 	Yes; Class 6S3 incl. sand, dust; *
Usage in industrial process technology	
— Against chemically active substances acc. to EN 60654-4	Yes; Class 3 (excluding trichlorethylene)
 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
Remark	
 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	
 Coatings for printed circuit board assemblies acc. to EN 61086 	Yes; Class 2 for high reliability
 Protection against fouling acc. to EN 60664-3 Military testing according to MIL-I-46058C, Amendment 7 	Yes; Type 1 protection Yes; Discoloration of coating possible during service life
 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A 	Yes; Conformal coating, Class A
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes; incl. failsafe
— FBD	Yes; incl. failsafe
— SCL	Yes
Know-how protection	
User program protection/password protection	Yes
Copy protection	Yes
Block protection	Yes
Access protection	
Protection level: Write protection	Yes
 Protection level: Read/write protection 	Yes
 Protection level: Complete protection 	Yes
programming / cycle time monitoring / header	
adjustable	Yes
Dimensions	
Width	130 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	585 g
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