



SIPLUS S7-1200 CPU 1214FC DC/DC/relay based on 6ES7214-1HF40-0XB0 with conformal coating, -25...+55 °C, compact CPU, DC/DC/relay, onboard I/O: 14 DI 24 V DC; 10 DQ relay 2 A; 2 AI 0-10 V DC, power supply: DC 20.4-28.8 V DC, program/data memory 125 KB

General information	
Product type designation	CPU 1214FC DC/DC/Relay
Engineering with	
<ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version 	see entry ID: 109746275
Supply voltage	
Rated value (DC)	
<ul style="list-style-type: none"> 24 V DC 	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Load voltage L+	
<ul style="list-style-type: none"> Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) 	24 V 20.4 V 28.8 V
Input current	
Current consumption, max.	1 500 mA; max. with all expansion accessories
Inrush current, max.	12 A; at 28.8 V
Encoder supply	
24 V encoder supply	
<ul style="list-style-type: none"> 24 V 	L+ minus 4 V DC min.
Power loss	
Power loss, typ.	12 W
Memory	
Work memory	
<ul style="list-style-type: none"> integrated expandable 	125 kbyte No
Load memory	
<ul style="list-style-type: none"> integrated Plug-in (SIMATIC Memory Card), max. 	4 Mbyte with SIMATIC memory card
Backup	
<ul style="list-style-type: none"> present without battery 	Yes; maintenance-free Yes
CPU processing times	
for bit operations, typ.	0.08 µs; / Operation
for word operations, typ.	1.7 µs; / Operation
for floating point arithmetic, typ.	2.3 µs; / instruction
CPU-blocks	
Number of blocks (total)	1 024; OBs, FBs, FCs, DBs
OB	
<ul style="list-style-type: none"> Number, max. 	Limited only by RAM for code

Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	10 kbyte
Address area	
I/O address area	
• Inputs	1 024 byte
• Outputs	1 024 byte
Process image	
• Inputs, adjustable	1 024 byte
• Outputs, adjustable	1 024 byte
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; 12 days min. at 40 °C
• Deviation per day, max.	±60 s per month
Digital inputs	
Number of digital inputs	14
• 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; 14 inputs at 55 °C horizontal or 45 °C vertical
Input voltage	
• Rated value (DC)	24 V; DC at 4 mA nominal
• 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.	4 mA; nominal
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 ms
— at "0" to "1", min.	0.1 µs
— at "0" to "1", max.	20 ms
for interrupt inputs	
— parameterizable	Yes
for technological functions	
— parameterizable	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
Short-circuit protection	No; to be provided externally
Switching capacity of the outputs	
• with resistive load, max.	2 A
• on lamp load, max.	30 W; 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.
Relay outputs	
• Number of relay outputs	10
• Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100 000
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	
• Voltage	Yes; 0 to 10V

Input ranges (rated values), voltages	
<ul style="list-style-type: none"> • 0 to +10 V — Input resistance (0 to 10 V) 	Yes ≥100k ohms
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	100 m; shielded, twisted pair
Analog outputs	
Number of analog outputs	0
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	100 m; shielded, twisted pair
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) 	10 bit Yes 625 μs
Encoder	
Connectable encoders	
<ul style="list-style-type: none"> • 2-wire sensor 	Yes
1. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Interface types	
<ul style="list-style-type: none"> • RJ 45 (Ethernet) 	Yes
Protocols	
<ul style="list-style-type: none"> • PROFINET IO Controller • PROFINET IO Device 	Yes Yes
PROFINET IO Controller	
Services	
<ul style="list-style-type: none"> — Number of IO devices with prioritized startup, max. 	16
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIsafe	No
PROFIBUS	Yes; CM 1243-5 required
AS-Interface	Yes
Protocols (Ethernet)	
<ul style="list-style-type: none"> • TCP/IP 	Yes
Open IE communication	
<ul style="list-style-type: none"> • TCP/IP • ISO-on-TCP (RFC1006) • UDP 	Yes Yes Yes
Web server	
<ul style="list-style-type: none"> • supported • User-defined websites 	Yes Yes
Further protocols	
<ul style="list-style-type: none"> • MODBUS 	Yes
communication functions / header	
S7 communication	
<ul style="list-style-type: none"> • supported • as server • as client 	Yes Yes Yes
Test commissioning functions	
Status/control	
<ul style="list-style-type: none"> • Status/control variable • Variables 	Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
<ul style="list-style-type: none"> • Forcing 	Yes
Diagnostic buffer	
<ul style="list-style-type: none"> • present 	Yes
Traces	

- Number of configurable Traces 2; Up to 512 KB of data per trace are possible

Integrated Functions

Frequency measurement	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4

Potential separation

Potential separation digital inputs	
• Potential separation digital inputs	Functional isolation (Optocoupler)

Permissible potential difference

between different circuits	500 V DC between 24 V DC and 5 V DC
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EMC

Interference immunity against discharge of static electricity

• Interference immunity against discharge of static electricity acc. to IEC 61000-4-2	Yes
— 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
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Interference immunity against conducted variable disturbance induced by high-frequency fields

• Interference immunity against high-frequency radiation acc. to IEC 61000-4-6	Yes
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Emission of radio interference acc. to EN 55 011

• Limit class A, for use in industrial areas	Yes; Group 1
• Limit class B, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011

Degree and class of protection

IP degree of protection	IP20
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Standards, approvals, certificates

Marine approval	Yes
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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
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Ambient temperature during operation

• min.	-25 °C; = Tmin
• max.	55 °C; = Tmax
• horizontal installation, min.	-25 °C
• horizontal installation, max.	55 °C
• vertical installation, min.	-25 °C
• vertical installation, max.	45 °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

Altitude during operation relating to sea level

• Installation altitude above sea level, max.	2 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m)

Relative humidity

• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
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Vibrations

<ul style="list-style-type: none"> • Vibration resistance during operation acc. to IEC 60068-2-6 • Operation, tested according to IEC 60068-2-6 	<p>2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail</p> <p>Yes</p>
Shock testing	
<ul style="list-style-type: none"> • tested according to IEC 60068-2-27 	Yes; IEC 68, Part 2-27; half-sine, 15 g, 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	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
— to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-3	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	
<ul style="list-style-type: none"> • Coatings for printed circuit board assemblies acc. to EN 61086 • Protection against fouling acc. to EN 60664-3 • Military testing according to MIL-I-46058C, Amendment 7 • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A 	<p>Yes; Class 2 for high reliability</p> <p>Yes; Type 1 protection</p> <p>Yes; Discoloration of coating possible during service life</p> <p>Yes; Conformal coating, Class A</p>
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes; incl. failsafe
— FBD	Yes; incl. failsafe
— SCL	Yes
programming / cycle time monitoring / header	
<ul style="list-style-type: none"> • adjustable 	Yes
Dimensions	
Width	110 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	435 g
last modified:	4/1/2022 