

SIPLUS S7-1200 CPU 1214C DC/DC/DC -40...+70 DEGREES C  
WITH CONFORMAL COATING BASED ON 6ES7214-1AG40-0XB0 .  
COMPACT CPU, DC/DC/DC, ONBOARD I/O: 14 DI 24V DC 10 DO  
24 V DC 2 AI 0 - 10V DC, POWER SUPPLY: DC 20.4 - 28.8 V DC,  
PROGRAM/DATA MEMORY: 75 KB



Figure similar

| General information                   |                    |
|---------------------------------------|--------------------|
| Product type designation              | CPU 1214C DC/DC/DC |
| 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             |
| Reverse polarity protection           | Yes                |
| Load voltage L+                       |                    |
| • Rated value (DC)                    | 24 V               |
| • permissible range, lower limit (DC) | 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 DC                                                                                                                                                  |
| <b>Output current</b>                                             |                                                                                                                                                                     |
| for backplane bus (5 V DC), max.                                  | 1 600 mA; Max. 5 V DC for SM and CM                                                                                                                                 |
| <b>Encoder supply</b>                                             |                                                                                                                                                                     |
| 24 V encoder supply                                               |                                                                                                                                                                     |
| • 24 V                                                            | L+ minus 4 V DC min.                                                                                                                                                |
| <b>Power loss</b>                                                 |                                                                                                                                                                     |
| Power loss, typ.                                                  | 12 W                                                                                                                                                                |
| <b>Memory</b>                                                     |                                                                                                                                                                     |
| 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                                                                                                                                               |
| • without battery                                                 | Yes                                                                                                                                                                 |
| <b>CPU processing times</b>                                       |                                                                                                                                                                     |
| for bit operations, typ.                                          | 0.085 µs; / instruction                                                                                                                                             |
| for word operations, typ.                                         | 1.7 µs; / instruction                                                                                                                                               |
| for floating point arithmetic, typ.                               | 2.3 µs; / instruction                                                                                                                                               |
| <b>CPU-blocks</b>                                                 |                                                                                                                                                                     |
| 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                                                                                                                                        |
| <b>Data areas and their retentivity</b>                           |                                                                                                                                                                     |
| retentive data area in total (incl. times, counters, flags), max. | 10 kbyte                                                                                                                                                            |
| Flag                                                              |                                                                                                                                                                     |
| • Number, 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                                                                                     |
| <b>Address area</b>                                               |                                                                                                                                                                     |
| Process image                                                     |                                                                                                                                                                     |
| • Inputs, adjustable                                              | 1 kbyte                                                                                                                                                             |

- Outputs, adjustable

1 kbyte

## Hardware configuration

Number of modules per system, max.

3 communication modules, no signal board can be used, 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)

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 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

- of which high-speed outputs

4; 100 kHz Pulse Train Output

integrated channels (DO)

10

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                           |
| 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)                         | ≥100k ohms                  |
| Cable length                                           |                             |
| • shielded, max.                                       | 100 m; twisted and shielded |
| Analog outputs                                         |                             |
| Number of analog outputs                               | 0                           |
| Analog value generation                                |                             |
| 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                      |
| Encoder                                                |                             |
| Connectable encoders                                   |                             |
| • 2-wire sensor                                        | Yes                         |
| 1. Interface                                           |                             |
| Interface type                                         | PROFINET                    |

|                                                     |                         |
|-----------------------------------------------------|-------------------------|
| Physics                                             | Ethernet                |
| Isolated                                            | Yes                     |
| automatic detection of transmission rate            | Yes                     |
| Autonegotiation                                     | Yes                     |
| Autocrossing                                        | Yes                     |
| Functionality                                       |                         |
| • PROFINET IO Controller                            | Yes                     |
| • PROFINET IO Device                                | Yes                     |
| • Open IE communication                             | Yes                     |
| • Web server                                        | Yes                     |
| PROFINET IO Controller                              |                         |
| • Transmission rate, max.                           | 100 Mbit/s              |
| Services                                            |                         |
| — Number of connectable IO Devices, max.            | 16                      |
| PROFINET IO Device                                  |                         |
| Services                                            |                         |
| — Shared device                                     | Yes                     |
| — Number of IO Controllers with shared device, max. | 2                       |
| 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                     |
| • User-defined websites                             | 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; 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                              | 4; With integrated DO                                                |
| PID controller                                                                        | Yes                                                                  |
| Number of alarm inputs                                                                | 4                                                                    |
| Number of pulse outputs                                                               | 4                                                                    |
| Limit frequency (pulse)                                                               | 100 kHz                                                              |
| 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                                                | Yes                                                                  |
| • between the channels                                                                | No                                                                   |
| • between the channels, in groups of                                                  | 1                                                                    |
| 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                                                                  |

|                                                                                                      |                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Interference immunity against voltage surge</b>                                                   |                                                                                                                                                                                                                                                                                                                                               |
| • on the supply lines acc. to IEC 61000-4-5                                                          | Yes                                                                                                                                                                                                                                                                                                                                           |
| <b>Interference immunity against conducted variable disturbance induced by high-frequency fields</b> |                                                                                                                                                                                                                                                                                                                                               |
| • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6                       | Yes                                                                                                                                                                                                                                                                                                                                           |
| <b>Emission of radio interference acc. to EN 55 011</b>                                              |                                                                                                                                                                                                                                                                                                                                               |
| • 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                                                                                                                                                                                                                                |
| <b>Degree and class of protection</b>                                                                |                                                                                                                                                                                                                                                                                                                                               |
| Degree of protection acc. to EN 60529                                                                |                                                                                                                                                                                                                                                                                                                                               |
| • IP20                                                                                               | Yes                                                                                                                                                                                                                                                                                                                                           |
| <b>Ambient conditions</b>                                                                            |                                                                                                                                                                                                                                                                                                                                               |
| <b>Free fall</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                               |
| • Fall height, max.                                                                                  | 0.3 m; five times, in product package                                                                                                                                                                                                                                                                                                         |
| <b>Ambient temperature during operation</b>                                                          |                                                                                                                                                                                                                                                                                                                                               |
| • min.                                                                                               | -40 °C; = Tmin; Startup @ -25 °C                                                                                                                                                                                                                                                                                                              |
| • max.                                                                                               | 70 °C; = Tmax; Tmax > +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position; Tmax > +60 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 1 (no adjacent points) with horizontal mounting position |
| <b>Ambient temperature during storage/transportation</b>                                             |                                                                                                                                                                                                                                                                                                                                               |
| • min.                                                                                               | -40 °C                                                                                                                                                                                                                                                                                                                                        |
| • max.                                                                                               | 70 °C                                                                                                                                                                                                                                                                                                                                         |
| <b>Vibrations</b>                                                                                    |                                                                                                                                                                                                                                                                                                                                               |
| • Vibrations                                                                                         | 2 g (m/s <sup>2</sup> ) wall mounting, 1 g (m/s <sup>2</sup> ) DIN rail                                                                                                                                                                                                                                                                       |
| • Operation, tested according to IEC 60068-2-6                                                       | Yes                                                                                                                                                                                                                                                                                                                                           |
| <b>Shock test</b>                                                                                    |                                                                                                                                                                                                                                                                                                                                               |
| • 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                                                                                                                                                                                                                                                     |
| <b>Extended ambient conditions</b>                                                                   |                                                                                                                                                                                                                                                                                                                                               |
| • relative to ambient temperature-atmospheric pressure-installation altitude                         | 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)                                                                                                                                       |
| <b>Relative humidity</b>                                                                             |                                                                                                                                                                                                                                                                                                                                               |
| — With condensation, tested in accordance with IEC 60068-2-38, max.                                  | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions)                                                                                                                                                                                                                                                           |
| <b>Resistance</b>                                                                                    |                                                                                                                                                                                                                                                                                                                                               |
| — against biologically active substances / conformity with EN 60721-3-3                              | 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!                                                                                                                                                                            |

— against chemically active substances /  
conformity with EN 60721-3-3

Yes; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!

— against mechanically active substances /  
conformity with EN 60721-3-3

Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!

## Configuration

### Programming

#### Programming language

— LAD

Yes

— FBD

Yes

— SCL

Yes

### Cycle time monitoring

• adjustable

Yes

## Dimensions

Width

110 mm

Height

100 mm

Depth

75 mm

## Weights

Weight, approx.

415 g

**last modified:**

10/28/2016