

Siemens 6ES7214-1AE30-0XB0 Manual

Brand	Siemens
Product Series	Siemens
Product Type	of interface PROFINET

Description

Product data sheet 6ES7214-1AE30-0XB0

SIMATIC S7-1200, CPU 1214C, 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: 50 KB

Product status

associated programming package STEP 7 Basic V10.5

Supply voltages

Rated value

DC 24 V Yes

permissible range, lower limit (DC) 20.4 V

permissible range, upper limit (DC) 28.8 V

Short-circuit protection 0.000000000000000E+00

Load voltage L+

Rated value (DC) 24 V

permissible range, lower limit (DC) 20.4 V

permissible range, upper limit (DC) 28.8 V

Current consumption

Current consumption, max. 1.5 A ; 24 VDC

Inrush current, max. 12 A ; At 28.8 V

Current output to backplane bus (DC 5 V), max. 1600 mA ; 5 VDC max. for SM and CM

Current consumption/power loss

Power loss, typ. 12 W

Memory

Usable memory for user data 50 kbyte

RAM

integrated 50 kbyte

expandable No

Backup

present Yes ; entire project maintenance-free in the integral

EEPROM

without battery Yes

CPU/blocks

OB

Number, max. Limited only by RAM for code

CPU/processing times

for bit operations, min. 0.1 μ s ; / instruction

for word operations, min. 12 μ s ; / instruction

for floating point arithmetic, min. 18 μ s ; / instruction

Data areas and their remanence

Retentive data area in total (incl. times, counters, flags), max.

2048 byte

Flag

Number, max. 8 kbyte ; Size of bit memory address area

Address area

I/O address area

I/O address area, overall 1024 bytes for inputs / 1024 bytes for outputs

Inputs 1024 byte

Outputs 1024 byte

Process image

Inputs, adjustable 1 kbyte

Outputs, adjustable 1 kbyte

Digital channels

integrated channels (DI) 14

integrated channels (DO) 10

Analog channels

Number of integrated channels (AI) 2

Number of integrated channels (AO) 0

Hardware config.

Number of modules per system, max. 3 comm. modules, 1 signal board, 8 signal modules

Time

Clock

Hardware clock (real-time clock) Yes

Backup time 240 h ; Typical

Deviation per day, max. 60 s/month @ 25°C

Test commissioning functions

Status/control

Status/control variable Yes

Variables Inputs/outputs, memory bits, DB, distributed I/Os, timers, counters

Forcing

Forcing Yes

Communication functions

S7 communication

supported Yes

as server Yes

Open IE communication

TCP/IP Yes

ISO-on-TCP (RFC1006) Yes

Number of connections

overall 15 ; dynamically

1st interface

Type of interface PROFINET

Physics Ethernet

isolated Yes

automatic detection of transmission speed Yes

Autonegotiation Yes

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Product function / at the interface 1 / Autocrossover Yes

CPU/programming

Configuration software

STEP 7 STEP 7 Basic V10.5

Programming language

LAD Yes

FUP Yes

Cycle time monitoring

adjustable Yes

Digital inputs

Number of digital inputs 14 ; Integrated

of which, inputs usable for technological functions 6 ; HSC (High Speed Counting)

m/p-reading Yes

Number of simultaneously controllable inputs

[nicht versorgt: TAK_ABP289_001_000]

Number of simultaneously controllable inputs, up to 40

°C

14

Input voltage

Rated value, DC 24 V

for signal "0" 5 VDC at 1 mA

for signal "1" 15 VDC at 2.5 mA

Input current

for signal "1", typ. 1 mA

Input delay (for rated value of input voltage)

for standard inputs

programmable 0.2, 0.4, 0.8, 1.6, 3.2, 6.4, and 12.8 ms, selectable in groups of four

at " to "1", min. 0.2 ms

at "0" to "1", max. 12.8 ms

for interrupt inputs

programmable Yes

Cable length

cable length, shielded, max. 500 m ; 50 m for technological functions

Cable length unshielded, max. 300 m ; For technological functions: No

Digital outputs

Number of digital outputs 10

of which, high-speed outputs 2 ; 100 kHz Pulse Train Output

Short-circuit protection of the output No ; to be provided externally

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 "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

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"1" to "0", max. 5 μ s

Switching frequency

of the pulse outputs, with resistive load, max. 100 kHz

Cable length

cable length, shielded, max. 500 m

Cable length unshielded, max. 150 m

Analog inputs

Number of analog inputs 2

cable length, shielded, max. 100 m ; twisted and shielded

Voltage Yes

Input ranges (rated values), voltages

0 to +10 V Yes

Input resistance (0 to 10 V) 100k ohms

Analog value creation

Integration and conversion time/resolution per channel

Resolution with overload area (bit including sign), max. 10 bit

Integration time, parameterizable Yes

Conversion time (per channel) 625 μ s

Encoder supply

24 V encoder supply

24 V permissible range: 20.4 to 28.8 V

Encoder

Connectable encoders

2-wire BEROs Yes

Integrated Functions

Number of counters 6

Counter frequency (counter) max. 100 kHz

Frequency meter Yes

controlled positioning Yes

PID controller Yes

Number of alarm inputs 4

Number of pulse outputs 2

Limit frequency (pulse) 100 kHz

Isolation

Galvanic isolation, digital inputs

galvanic isolation, digital inputs 500 VAC for 1 minute

between the channels, in groups of 1

Isolation, digital outputs

Galvanic isolation, digital outputs Yes

between the channels No

between the channels, in groups of 2

Permissible potential difference

between different circuits 500 VDC between 24 VDC and 5 VDC

EMC

Interference immunity against discharge of static

electricity

Interference immunity against discharge of static

electricity to IEC 61000-4-2

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Yes

Interference immunity to cable-borne interference

on the supply lines to IEC 61000-4-4 Yes

Interference immunity on signal lines to IEC 61000-4-

4

Yes

on the supply lines to IEC 61000-4-5 Yes

Interference immunity against high frequency radiation

to IEC 61000-4-6

Yes

Emission of radio interferences to EN 55 011 (limit

class A)

Yes ; Group 1

Emission of radio interference to EN 55 011 (limit class

B)

Yes

Environmental requirements

Operating temperature

min. 0 °C

max. 55 °C

vertical installation, min. 0 °C

vertical installation, max. 45 °C

horizontal installation, min. 0 °C

horizontal installation, max. 55 °C

Storage/transport temperature www.AutoDCSTech.com

min. -40 °C

max. 70 °C

Air pressure

Operation, min. 795 hPa

Operation, max. 1080 hPa

Storage/transport, min. 660 hPa

Storage/transport, max. 1080 hPa

Relative humidity

Operation, max. 95 % ; no condensation

Vibrations

Vibrations 2G panel mount, 1G DIN rail mount

Operation checked according to IEC 60068-2-6 Yes

Shock test

checked according to IEC 60068-2-27 Yes ; 15 G, 11 ms pulse, 6 shocks in each of 3 axes

Degree of protection

IP 20 Yes

Standards, approvals, certificates

CE symbol Yes

C-TICK Yes

cULus Yes

FM approval Yes

Dimensions and weight

Dimensions and weight

Width 110 mm

Height 100 mm

Depth 75 mm

Weight

Weight, approx. 415 g

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