Data sheet
CPU 315SN/EC ECO (315-4EC32)

Technical data

Order no.	315-4EC32
Type	CPU 315SN/EC ECO

General information

Note	-
Features	SPEED7 technology 512 KB work memory PtP EtherCAT Master integrated
SPEED-Bus	-

Technical data power supply

Power supply (rated value)	DC 24 V
Power supply (permitted range)	DC 20.4...28.8 V
Reverse polarity protection	yes
Current consumption (no-load operation)	200 mA
Current consumption (rated value)	0.7 A
Inrush current	11 A
I²t	0.4 A²s
Max. current drain at backplane bus	2 A
Max. current drain load supply	-
Power loss	5.5 W

Load and working memory

Load memory, integrated	512 KB
Load memory, maximum	512 KB
Work memory, integrated	512 KB
Work memory, maximal	512 KB
Memory divided in 50% program / 50% data	yes
Memory card slot	MMC-Card with max. 1 GB

Hardware configuration

Racks, max.	4
Modules per rack, max.	8 in multiple-, 32 in a single-rack configuration
Number of integrated DP master	0
Number of DP master via CP	4
Operable function modules	8
Operable communication modules PtP	8
Operable communication modules LAN	8

Command processing times

Bit instructions, min.	0.01 µs
Word instruction, min.	0.01 µs
Double integer arithmetic, min.	0.01 µs
Floating-point arithmetic, min.	0.06 µs

Timers/Counters and their retentive characteristics

Number of S7 counters	512
S7 counter remanence	adjustable 0 up to 512
S7 counter remanence adjustable	C0 .. C7
Number of S7 times	512
S7 times remanence	adjustable 0 up to 512
S7 times remanence adjustable	not retentive

Data range and retentive characteristic

Number of flags	8192 Byte
Bit memories retentive characteristic adjustable	adjustable 0 up to 8192
Bit memories retentive characteristic preset	MB0 .. MB15
Number of data blocks	4095
Max. data blocks size	64 KB
Number range DBs	1 ... 4095
Max. local data size per execution level	1024 Byte
Max. local data size per block	1024 Byte

Blocks

Number of OBs	20
Maximum OB size	64 KB
Total number DBs, FBs, FCs	-
Number of FBs	2048
Maximum FB size	64 KB
Number range FBs	0 ... 2047
Number of FCs	2048
Maximum FC size	64 KB
Number range FCs	0 ... 2047
Maximum nesting depth per priority class	8
Maximum nesting depth additional within an error OB	4

Time

Real-time clock buffered	yes
Clock buffered period (min.)	6 w
Type of buffering	Vanadium Rechargeable Lithium Battery
Load time for 50% buffering period	20 h
Load time for 100% buffering period	48 h
Accuracy (max. deviation per day)	10 s
Number of operating hours counter	8
Clock synchronization	yes
Synchronization via MPI	Master/Slave
Synchronization via Ethernet (NTP)	Slave

Address areas (I/O)

Input I/O address area	2048 Byte
Output I/O address area	2048 Byte
Process image adjustable	yes
Input process image preset	256 Byte
Output process image preset	256 Byte

Input process image maximal	2048 Byte
Output process image maximal	2048 Byte
Digital inputs	16384
Digital outputs	16384
Digital inputs central	1024
Digital outputs central	1024
Integrated digital inputs	-
Integrated digital outputs	-
Analog inputs	1024
Analog outputs	1024
Analog inputs, central	256
Analog outputs, central	256
Integrated analog inputs	-
Integrated analog outputs	-

Communication functions

PG/OP channel	yes
Global data communication	yes
Number of GD circuits, max.	8
Size of GD packets, max.	22 Byte
S7 basic communication	yes
S7 basic communication, user data per job	76 Byte
S7 communication	yes
S7 communication as server	yes
S7 communication as client	-
S7 communication, user data per job	160 Byte
Number of connections, max.	32

Functionality Sub-D interfaces

Type	X2
Type of interface	RS485
Connector	Sub-D, 9-pin, female
Electrically isolated	yes
MPI	yes
MP²I (MPI/RS232)	-
DP master	-
DP slave	-
Point-to-point interface	-
5V DC Power supply	max. 90mA, isolated
24V DC Power supply	max. 100mA, non-isolated

Type	X3
Type of interface	RS485
Connector	Sub-D, 9-pin, female
Electrically isolated	yes
MPI	-
MP²I (MPI/RS232)	-
DP master	-
DP slave	-

Point-to-point interface	yes
5V DC Power supply	max. 90mA, isolated
24V DC Power supply	max. 100mA, non-isolated

Functionality MPI

Number of connections, max.	32
PG/OP channel	yes
Routing	yes
Global data communication	yes
S7 basic communication	yes
S7 communication	yes
S7 communication as server	yes
S7 communication as client	-
Transmission speed, min.	19.2 kbit/s
Transmission speed, max.	12 Mbit/s

Functionality PROFIBUS master

PG/OP channel	-
Routing	-
S7 basic communication	-
S7 communication	-
S7 communication as server	-
S7 communication as client	-
Activation/deactivation of DP slaves	-
Direct data exchange (slave-to-slave communication)	-
DPV1	-
Transmission speed, min.	-
Transmission speed, max.	-
Number of DP slaves, max.	-
Address range inputs, max.	-
Address range outputs, max.	-
User data inputs per slave, max.	-
User data outputs per slave, max.	-

Functionality PROFIBUS slave

PG/OP channel	-
Routing	-
S7 communication	-
S7 communication as server	-
S7 communication as client	-
Direct data exchange (slave-to-slave communication)	-
DPV1	-
Transmission speed, min.	-
Transmission speed, max.	-
Automatic detection of transmission speed	-
Transfer memory inputs, max.	-
Transfer memory outputs, max.	-
Address areas, max.	-
User data per address area, max.	-

Point-to-point communication

PtP communication	yes
Interface isolated	yes
RS232 interface	-
RS422 interface	-
RS485 interface	yes
Connector	Sub-D, 9-pin, female
Transmission speed, min.	150 bit/s
Transmission speed, max.	115.5 kbit/s
Cable length, max.	500 m

Point-to-point protocol

ASCII protocol	yes
STX/ETX protocol	yes
3964(R) protocol	yes
RK512 protocol	-
USS master protocol	yes
Modbus master protocol	yes
Modbus slave protocol	-
Special protocols	-

Functionality RJ45 interfaces

Type	X5
Type of interface	Ethernet 10/100 MBit
Connector	RJ45
Electrically isolated	yes
PG/OP channel	yes
Number of connections, max.	4
Productive connections	-

Type	X8
Type of interface	Ethernet 10/100 MBit
Connector	RJ45
Electrically isolated	yes
PG/OP channel	yes
Number of connections, max.	8
Productive connections	yes

Ethernet communication CP

Number of productive connections, max.	8
Number of productive connections by Siemens NetPro, max.	8
S7 connections	BSEND, BRCV, GET, PUT, Connection of active and passive data handling
User data per S7 connection, max.	32 KB
TCP-connections	FETCH PASSIV, WRITE PASSIV, Connection of passive data handling
User data per TCP connection, max.	64 KB
ISO-connections	-
User data per ISO connection, max.	-

ISO on TCP connections (RFC 1006)	FETCH PASSIV, WRITE PASSIV, Connection of passive data handling
User data per ISO on TCP connection, max.	32 KB
UDP-connections	-
User data per UDP connection, max.	-
UDP-multicast-connections	-
UDP-broadcast-connections	-

Ethernet open communication

Number of connections, max.	8
User data per ISO on TCP connection, max.	8 KB
User data per native TCP connection, max.	8 KB
User data per ad hoc TCP connection, max.	1460 Byte
User data per UDP connection, max.	1472 Byte

EtherCAT Master

Number of EtherCAT-slaves	128
Update time	500 µs .. 512 ms
Address range inputs, max.	2 KB
Address range outputs, max.	2 KB
EoE support	yes
FoE support	yes
Distributed Clock support	yes
Hotconnect Slaves	yes
Isochronous mode	-

Management & diagnosis

Protocols	ICMP LLC
Web based diagnosis	-
NCM diagnosis	yes

Housing

Material	PPE
Mounting	Rail System 300

Mechanical data

Dimensions (WxHxD)	80 mm x 125 mm x 120 mm
Weight	380 g

Environmental conditions

Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C

Certifications

UL certification	in preparation
KC certification	-