

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

Technical data

Type	Order no.	315-4EC32
Note -	Туре	CPU 315SN/PN ECO
Note -	Conoral information	
Features SPEED7 technology 512 kB work memory PEtherAT Master integrated SPEED-Bus - Technical data power supply Power supply (rated value) DC 24 V Power supply (remitted range) DC 20.428.8 V Reverse polarity protection		
SPEED-Bus - Technical data power supply Power supply (rated value) Power supply (rated value) Power supply (remitted range) Reverse polarity protection Current consumption (ro-load operation) Current consumption (rated value) Power supply (permitted range) Current consumption (rated value) Current consumption (rated value) Current drain at backplane bus Power loss S.5 W Load and working memory Load memory, integrated S12 KB Load and working memory Load memory, integrated S12 KB Work memory, integrated S12 KB Work memory, maximum S12 KB Work memory, maximal S12 KB Memory divided in 50% program / 50% data Memory card slot Hardware configuration Racks, max. 4 Modules per rack, max. 8 in multiple-, 32 in a single-rack configuration Number of integrated Praster 0 Coperable function modules PtP 8 Operable communication modules PtP 8 Operable communication modules PtP 8 Coperable communication modules LAN 8 Bit instructions, min. 0.01 μs Command processing times Bit instructions, min. 0.01 μs		CDEED7 to also also as
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Power supply (rated value) Power supply (permitted range) Reverse polarity protection Current consumption (no-load operation) Current consumption (rated value) Current consumption (rate val	SPEED-Bus	-
Power supply (permitted range) Reverse polarity protection Current consumption (no-load operation) Current consumption (rated value) Inrush current 11 A Pt 0.4 A?s Max. current drain at backplane bus 2 A Power loss 5.5 W Load and working memory Load memory, integrated Load memory, maximum 512 KB Work memory, maximum Memory divided in 50% program / 50% data Memory card slot Max. current drain at 50% program / 50% data Memory card slot Max. current drain at backplane bus 8 in multiple-, 32 in a single-rack configuration Number of DP master via CP Operable function modules Poperable communication modules PtP 8 Operable communication modules PtP 8 Command processing times Bit instructions, min. 0.01 μs Vort integrat integrat integrated, and in the processing times Bit instruction, min. 0.01 μs Vort integrat integrat integrated, and in the processing times Double integer arithmetic, min. 0.01 μs	Technical data power supply	
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Current consumption (no-load operation) Current consumption (rated value) Inrush current It A Pt O.4 A*s Max. current drain at backplane bus 2 A Power loss 5.5 W Load and working memory Load memory, integrated 512 KB Work memory, maximum 512 KB Work memory, maximal Memory divided in 50% program / 50% data Memory card slot MMC-Card with max. 1 GB Hardware configuration Racks, max. 4 Modules per rack, 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 Double integer arithmetic, min. 0.01 µs	Power supply (permitted range)	DC 20.428.8 V
Current consumption (rated value) Inrush current Inrush cur	Reverse polarity protection	✓
Inrush current 11 A Pt 0.4 APts Max. current drain at backplane bus 2 A 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, integrated 512 KB Work memory, maximal 512 KB Work memory, maximal 512 KB Memory divided in 50% program / 50% data ✓	Current consumption (no-load operation)	200 mA
Pix 0.4 A²s Max. current drain at backplane bus 2 A 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, mitegrated 512 KB Work memory, mitegrated 512 KB Work memory divided in 50% program / 50% data ✓ 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 PtP 8 Operable communication modules LAN 8 Et instructions, min. 0.01 μs Word instruction, min. 0.01 μs Double integer arithmetic, min. 0.01 μs	Current consumption (rated value)	0.7 A
Max. current drain at backplane bus 2 A Power loss 5.5 W Load and working memory 512 KB 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 ✓ 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	Inrush current	11 A
Power loss 5.5 W Load and working memory 512 KB Load memory, integrated 512 KB Work memory, integrated 512 KB Work memory, maximal 512 KB Memory divided in 50% program / 50% data ✓ Memory card slot MMC-Card with max. 1 GB Hardware configuration 8 in multiple-, 32 in a single-rack 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 8 Bit instructions, min. 0.01 μs Word instruction, min. 0.01 μs Double integer arithmetic, min. 0.01 μs	2 _t	0.4 A²s
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Work memory, integrated 512 KB Work memory, maximal 512 KB Memory divided in 50% program / 50% data ✓ Memory card slot MMC-Card with max. 1 GB Hardware configuration 4 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	Load memory, integrated	512 KB
Work memory, maximal 512 KB Memory divided in 50% program / 50% data ✓ 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	Load memory, maximum	512 KB
Memory divided in 50% program / 50% data ✓ 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	Work memory, integrated	512 KB
Memory card slot 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.	Work memory, maximal	512 KB
Hardware configuration Racks, max.	Memory divided in 50% program / 50% data	✓
Racks, max.4Modules per rack, max.8 in multiple-, 32 in a single-rack configurationNumber of integrated DP master0Number of DP master via CP4Operable function modules8Operable communication modules PtP8Operable communication modules LAN8Command processing timesBit instructions, min.0.01 μsWord instruction, min.0.01 μsDouble integer arithmetic, min.0.01 μs	Memory card slot	MMC-Card with max. 1 GB
Modules per rack, max. Number of integrated DP master Number of DP master via CP Operable function modules Operable communication modules PtP Operable communication modules LAN Command processing times Bit instructions, min. Oo1 µs Oo1 µs Double integer arithmetic, min. 8 in multiple-, 32 in a single-rack configuration 0 0 0 0 0 1 0 0 0 0 0 0 0	Hardware configuration	
Number of integrated DP master Number of DP master via CP 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	Racks, max.	4
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	Modules per rack, max.	8 in multiple-, 32 in a single-rack configuration
Operable function modules 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.	Number of integrated DP master	0
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	Number of DP master via CP	4
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	Operable function modules	8
Command processing times Bit instructions, min. 0.01 μs Word instruction, min. 0.01 μs Double integer arithmetic, min. 0.01 μs	Operable communication modules PtP	8
Bit instructions, min. 0.01 µs Word instruction, min. 0.01 µs Double integer arithmetic, min. 0.01 µs	Operable communication modules LAN	8
Word instruction, min.0.01 μsDouble integer arithmetic, min.0.01 μs	Command processing times	
Double integer arithmetic, min. 0.01 μs	Bit instructions, min.	0.01 µs
	Word instruction, min.	0.01 µs
Floating-point grithmetic min	Double integer arithmetic, min.	0.01 µs
r roating point antitinetic, tilli.	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	✓	
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	20 n 48 h	
Accuracy (max. deviation per day)	10 s	
Number of operating hours counter	8	
Clock synchronization	<u> </u>	
Synchronization via MPI	Master/Slave	
Synchronization via Ethernet (NTP)	Slave	
	Siave	
Address areas (I/O)		
Input I/O address area	2048 Byte	
Output I/O address area	2048 Byte	
Process image adjustable	✓	
Input process image preset	256 Byte	



Output process image preset	256 Byte	A YASKAWA COMPANY
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	✓	
Global data communication	✓	
Number of GD circuits, max.	8	
Size of GD packets, max.	22 Byte	
S7 basic communication	✓	
S7 basic communication, user data per job	76 Byte	
S7 communication	✓	
S7 communication as server	✓	
S7 communication as client	-	
S7 communication, user data per job	160 Byte	
Number of connections, max.	32	
Functionality Sub-D interfaces		
Туре	X2	
Type of interface	RS485	
Connector	Sub-D, 9-pin, female	
Electrically isolated	✓	
MPI	✓	
MP2I (MPI/RS232)	-	
DP master	-	
DP slave	-	
Point-to-point interface	-	
Туре	Х3	
Type of interface	RS485	
Connector	Sub-D, 9-pin, female	
Electrically isolated	✓	
MPI	-	
MP²I (MPI/RS232)	-	



DP master	A YASKAWA COMPANY
DP slave	-
Point-to-point interface	✓
Functionality MPI	
Number of connections, max.	32
PG/OP channel	✓
Routing	✓
Global data communication	✓
S7 basic communication	✓
S7 communication	√
S7 communication as server	√
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 server	-
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.	<u> </u>
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.	- A YASKAWA COMPANY	
Point-to-point communication		
PtP communication	✓	
Interface isolated	y	
RS232 interface		
RS422 interface	-	
RS485 interface	√	
Connector	VØ 10	
Transmission speed, min.	Sub-D, 9-pin, female 150 bit/s	
Transmission speed, max.	115.5 kbit/s	
Cable length, max.	500 m	
Cable leligat, max.	000 111	
Point-to-point protocol		
ASCII protocol	✓	
STX/ETX protocol	✓	
3964(R) protocol	✓	
RK512 protocol	-	
USS master protocol	√	
Modbus master protocol	y	
Modbus slave protocol		
Special protocols	-	
Functionality RJ45 interfaces		
Type	X5	
Type of interface	Ethernet 10/100 MBit	
Connector	RJ45	
Electrically isolated	✓	
PG/OP channel	✓	
Number of connections, max.	4	
Productive connections	-	
Туре	X8	
Type of interface	Ethernet 10/100 MBit	
Connector	RJ45	
Electrically isolated	✓	
PG/OP channel	✓	
Number of connections, max.	8	
Productive connections	✓	
Ethernet communication CD		
Ethernet communication CP	0	
Number of productive connections, max.	8	
Number of productive connections by Siemens NetPro, max. S7 connections	8 RSEND RRCV GET PLIT Connection of active and passive	
S7 CONTRECTIONS	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, CONTACTOR PASSIVE	
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	✓	
FoE support	✓	
Distributed Clock support	✓	
Hotconnect Slaves	✓	
Management & diagnosis		
Protocols	ICMP LLC	
Web based diagnosis	-	
NCM diagnosis	✓	
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		
UL508 certification	in preparation	