

Data sheet

CPU 315SB/DPM (315-2AG12)

Technical data

Type CPU 315SB/DPM General Information Note Note 5 FEED7 technology 1 MB work memory Memory extension (max. 2 MB) PROFIBUS-DP master / PIP (switchable) SPEED-Bus - Technical data power supply Technical data power supply Power supply (reted value) DC 24 V Power supply (permitted range) DC 20 A28.8 V Reverse polarity protection ✓ Current consumption (no-load operation) 200 mA Current consumption (rated value) 1 A Insus ournet drain at backplane bus 2.5 A Power loss 6 W Technical data power supply Power supply (rated value) DC 24 V Power supply (rated value) DC 24 V Power supply (permitted range) DC 25 A28.8 V Reverse polarity protection In A Current consumption (rated value) 1 A In Language (rate of	Order no.	315-2AG12	
Note - Features SPEEDT technology I MB work memory Memory and SPEEDT technology I MB work memory MB memory and SPEEDT technology I MB work memory MB memory and SPEEDT technology I MB work memory MB memory and SPEEDT technology I MB work memory I mB memory	Туре	CPU 315SB/DPM	
Features SPEED7 technology 1 MB work memory Memory extension (max. 2 MB) PROFIBUS-DP master / PIP (switchable) SPEED-Bus	General information		
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Power supply (rated value) Power supply (permitted range) Reverse polarity protection Current consumption (no-load operation) Current consumption (rated value) 1 A Pt 0.5 A²s Max. current drain at backplane bus Power supply (rated value) Power supply (rated value) DC 24 V Power supply (rated value) DC 24 V Power supply (rated value) Power supply (rated value) DC 24 V Power supply (rated value) Current consumption (no-load operation) Current consumption (rated value) 1 A Inrush current 5 A Pt 0.5 A²s Max. current drain at backplane bus 2.5 A Max. current drain at backplane bus 2.5 A Max. current drain load supply Power loss 6 W Load and working memory Load memory, integrated 1 MB Work memory, maximum 2 MB Memory divided in 50% program / 50% data	Features	1 MB work memory Memory extension (max. 2 MB)	
Power supply (rated value) Power supply (permitted range) Power supply (not-load operation) Power supply (not-load operation) Power supply (not-load operation) Power loss Power loss Power loss Power supply (rated value) Power supply (rated value) Power supply (rated value) Power supply (permitted range) Powe	SPEED-Bus	-	
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Reverse polarity protection Current consumption (no-load operation) Current consumption (rated value) Inrush current 5 A Pt 0.5 A²s Max. current drain at backplane bus Current consuppty (rated value) DC 24 V Power supply (rated value) DC 24 V Power supply (permitted range) Current consumption (no-load operation) Current consumption (no-load operation) Current consumption (no-load operation) Current consumption (no-load operation) Current consumption (rated value) Ana. current drain at backplane bus 5 A Pt 0.5 A²s Max. current drain at backplane bus 6 W Load and working memory Load memory, integrated Load memory, maximum Vork memory, integrated Load memory, maximal Memory divided in 50% program / 50% data	Power supply (rated value)	DC 24 V	
Current consumption (no-load operation) Current consumption (rated value) Inrush current 5 A Pt 0.5 A²s Max. current drain at backplane bus 6 W Technical data power supply Power supply (rated value) DC 24 V Power supply (permitted range) Current consumption (no-load operation) Current consumption (no-load operation) Current consumption (rated value) 1 A Inrush current 5 A Pt 0.5 A²s Max. current drain at backplane bus 2.5 A Max. current drain at backplane bus 2.5 A Max. current drain load supply - Power loss 6 W Load and working memory Load memory, integrated Load memory, maximum 2 MB Work memory, maximal Memory divided in 50% program / 50% data 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1	Power supply (permitted range)	DC 20.428.8 V	
Current consumption (rated value) Inrush current 5 A Pt 0.5 A²s Max. current drain at backplane bus 2.5 A Power loss 6 W Technical data power supply Power supply (rated value) DC 24 V Power supply (permitted range) DC 20.428.8 V Reverse polarity protection Current consumption (no-load operation) Current consumption (rated value) 1 A Inrush current 5 A Pt 0.5 A²s Max. current drain at backplane bus 2.5 A Max. current drain load supply - Power loss 6 W Load and working memory Load memory, integrated 2 MB Work memory, integrated 1 MB Work memory, maximun 2 MB Memory divided in 50% program / 50% data	Reverse polarity protection	✓	
Inrush current iPt iPt iPt iPt iPt iPt iPt i	Current consumption (no-load operation)	200 mA	
Pt 0.5 A²s Max. current drain at backplane bus 2.5 A Power loss 6 W Technical data power supply Power supply (rated value) DC 24 V Power supply (permitted range) DC 20.428.8 V Reverse polarity protection ✓ Current consumption (no-load operation) 200 mA Current consumption (rated value) 1 A Inrush current 5 A Pt 0.5 A²s Max. current drain at backplane bus 2.5 A Max. current drain load supply - Power loss 6 W Load and working memory Load memory, integrated Load memory, maximum 2 MB Work memory, integrated 1 MB Work memory, maximal 2 MB Memory divided in 50% program / 50% data ✓	Current consumption (rated value)	1 A	
Max. current drain at backplane bus 2.5 A Power loss 6 W Technical data power supply Power supply (rated value) DC 24 V Power supply (permitted range) DC 20.428.8 V Reverse polarity protection ✓ Current consumption (no-load operation) 200 mA Current consumption (rated value) 1 A Inrush current 5 A Pt 0.5 A²s Max. current drain at backplane bus 2.5 A Max. current drain load supply - Power loss 6 W Load and working memory Load memory, integrated 2 MB Work memory, maximum 2 MB Work memory, integrated 1 MB Work memory, maximal 2 MB Memory divided in 50% program / 50% data ✓	Inrush current	5 A	
Power loss 6 W Technical data power supply Power supply (rated value) DC 24 V Power supply (permitted range) DC 20.428.8 V Reverse polarity protection Current consumption (no-load operation) 200 mA Current consumption (rated value) 1 A Inrush current 5 A Pt 0.5 A²s Max. current drain at backplane bus 2.5 A Max. current drain load supply - Power loss 6 W Load and working memory Load memory, integrated 2 MB Uork memory, integrated 1 MB Work memory, maximum 2 MB Work memory, maximal 2 MB Memory divided in 50% program / 50% data	2t	0.5 A ² s	
Technical data power supply Power supply (rated value) Power supply (permitted range) Power consumption (no-load operation) Power consumption (rated value) Power consumption (rated value) Power drain at backplane bus Power loss Power	Max. current drain at backplane bus	2.5 A	
Power supply (rated value) Power supply (permitted range) Reverse polarity protection Current consumption (no-load operation) Current consumption (rated value) Inrush current 5 A Pt 0.5 A²s Max. current drain at backplane bus 2.5 A Max. current drain load supply Power loss 6 W Load and working memory Load memory, integrated 2 MB Work memory, maximum 2 MB Work memory, maximal Memory divided in 50% program / 50% data DC 24 V DC 24 V DC 20.428.8 V Reverse polarity protection 200 mA 1 A 1 A 1 A 1 A 1 A 1 A 1 A	Power loss	6 W	
Power supply (permitted range) Reverse polarity protection Current consumption (no-load operation) Current consumption (rated value) Inrush current 5 A Pet 0.5 A2s Max. current drain at backplane bus 2.5 A Max. current drain load supply - Power loss 6 W Load and working memory Load memory, integrated 2 MB Work memory, integrated 1 MB Work memory, maximun 2 MB Memory divided in 50% program / 50% data			
Reverse polarity protection Current consumption (no-load operation) 200 mA Current consumption (rated value) 1 A Inrush current 5 A 1²t 0.5 A²s Max. current drain at backplane bus 2.5 A Max. current drain load supply - Power loss 6 W Load and working memory Load memory, integrated 2 MB Load memory, maximum 2 MB Work memory, integrated 1 MB Work memory, maximal 2 MB Memory divided in 50% program / 50% data			
Current consumption (no-load operation) Current consumption (rated value) Inrush current 5 A Inrush current 6 W Load and working memory Load memory, integrated Vork memory, maximul Work memory, maximal Memory divided in 50% program / 50% data		Total	
Current consumption (rated value) Inrush current 5 A 1²t 0.5 A²s Max. current drain at backplane bus 2.5 A Max. current drain load supply - Power loss 6 W Load and working memory Load memory, integrated 2 MB Load memory, integrated 2 MB Work memory, integrated 1 MB Work memory, maximun 2 MB Work memory, maximal 3 MB	Reverse polarity protection	✓	
Inrush current S A Pt 0.5 A²s Max. current drain at backplane bus 2.5 A Max. current drain load supply - Power loss 6 W Load and working memory Load memory, integrated 2 MB Load memory, maximum 2 MB Work memory, integrated 1 MB Work memory, maximal 2 MB Work memory, maximal 2 MB Memory divided in 50% program / 50% data ✓	Current consumption (no-load operation)	200 mA	
Max. current drain at backplane bus Max. current drain load supply Power loss 6 W Load and working memory Load memory, integrated Load memory, maximum 2 MB Work memory, integrated 1 MB Work memory, maximal 2 MB Work memory, integrated 3 MB	Current consumption (rated value)	1 A	
Max. current drain at backplane bus 2.5 A Max. current drain load supply - Power loss 6 W Load and working memory Load memory, integrated 2 MB Load memory, maximum 2 MB Work memory, integrated 1 MB Work memory, maximal 2 MB	Inrush current	5 A	
Max. current drain load supply Power loss 6 W Load and working memory Load memory, integrated 2 MB Load memory, maximum 2 MB Work memory, integrated 1 MB Work memory, maximal 2 MB	l ² t	0.5 A²s	
Power loss 6 W Load and working memory 2 MB Load memory, integrated 2 MB Work memory, integrated 1 MB Work memory, maximal 2 MB Memory divided in 50% program / 50% data ✓	Max. current drain at backplane bus	2.5 A	
Load and working memory Load memory, integrated 2 MB Load memory, maximum 2 MB Work memory, integrated 1 MB Work memory, maximal 2 MB Memory divided in 50% program / 50% data ✓	Max. current drain load supply	-	
Load memory, integrated2 MBLoad memory, maximum2 MBWork memory, integrated1 MBWork memory, maximal2 MBMemory divided in 50% program / 50% data✓	Power loss	6 W	
Load memory, maximum 2 MB Work memory, integrated 1 MB Work memory, maximal 2 MB Memory divided in 50% program / 50% data	Load and working memory		
Work memory, integrated 1 MB Work memory, maximal 2 MB Memory divided in 50% program / 50% data	Load memory, integrated	2 MB	
Work memory, maximal 2 MB Memory divided in 50% program / 50% data	Load memory, maximum	2 MB	
Memory divided in 50% program / 50% data	Work memory, integrated	1 MB	
1877	Work memory, maximal	2 MB	
Memory card slot MMC-Card with max. 1 GB	Memory divided in 50% program / 50% data	✓	
•	Memory card slot	MMC-Card with max. 1 GB	
Hardware configuration	Hardware configuration		
Racks, max. 4	Racks, max.	4	
Modules per rack, max. 8 in multiple-, 32 in a single-rack configuration	Modules per rack, max.	8 in multiple-, 32 in a single-rack configuration	



Number of integrated DP master	1 A YASKAWA COI	MPANY
Number of DP master via CP	4	
Operable function modules	8	
Operable communication modules PtP	8	
Operable communication modules LAN	8	
Operable communication modules LAN	0	
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 characte	eristics	
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	510 Byte	
Max. local data size per block	510 Byte	
max local data 620 per block	010 5)10	
Blocks		
Number of OBs	24	
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	48 h	
	-	



Accuracy (max. deviation per day)	10 s	A YASKAWA COMPANY
Number of operating hours counter	8	
Clock synchronization	√	
Synchronization via MPI	Master/Slave	
Synchronization via Ethernet (NTP)	no	
Address areas (I/O)		
Input I/O address area	8192 Byte	
Output I/O address area	8192 Byte	
Process image adjustable	✓	
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	65536	
Digital outputs	65536	
Digital inputs central	1024	
Digital outputs central	1024	
Integrated digital inputs	-	
Integrated digital outputs	-	
Analog inputs	4096	
Analog outputs	4096	
Analog inputs, central	256	
Analog outputs, central	256	
Integrated analog inputs	-	
Integrated analog outputs	-	
Communication functions		
PG/OP channel	√	
Global data communication	200.0	
	✓	
Number of GD circuits, max.	8	
Size of GD packets, max.	54 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		
Type	X2	
Type of interface	RS485	
Connector	Sub-D, 9-pin, female	
Electrically isolated	₹	
MPI	√	
MP²I (MPI/RS232)	₩	



DP master	A YASKAWA COMPAN'
DP slave	
Point-to-point interface	-
Туре	X3
Type of interface	RS485
Connector	Sub-D, 9-pin, female
Electrically isolated	✓
MPI	-
MP²l (MPI/RS232)	
DP master	yes
DP slave	yes
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 client	-
Activation/deactivation of DP slaves	✓
Direct data exchange (slave-to-slave communication)	-
DPV1	✓
Transmission speed, min.	9.6 kbit/s
Transmission speed, max.	12 Mbit/s
Number of DP slaves, max.	124
Address range inputs, max.	8 KB
Address range outputs, max.	8 KB
User data inputs per slave, max.	244 Byte
User data outputs per slave, max.	244 Byte
Functionality PROFIBUS slave	



PG/OP channel	A YASKAWA COMPANY
Routing	✓
S7 communication	✓
S7 communication as server	V
S7 communication as client	-
Direct data exchange (slave-to-slave communication)	
DPV1	V
Transmission speed, min.	9.6 kbit/s
Transmission speed, max.	12 Mbit/s
Automatic detection of transmission speed	-
Transfer memory inputs, max.	244 Byte
Transfer memory outputs, max.	244 Byte
Address areas, max.	32
User data per address area, max.	32 Byte
Point-to-point communication	
PtP communication	✓
Interface isolated	4
RS232 interface	
RS422 interface	-
RS485 interface	✓
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	✓
STX/ETX protocol	✓
3964(R) protocol	✓
RK512 protocol	-
USS master protocol	√
Modbus master protocol	✓
Modbus slave protocol	-
Special protocols	-
Functionality RJ45 interfaces	
Type	X4
Type of interface	Ethernet 10/100 MBit
Connector	RJ45
Electrically isolated	√
PG/OP channel	√
Number of connections, max.	4
Productive connections	
Housing	



Rail System 300	
40 mm x 125 mm x 120 mm	
290 g	
0 °C to 60 °C	
-25 °C to 70 °C	
yes	
	290 g 0 °C to 60 °C -25 °C to 70 °C