

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

S7-300

6ES7313-6BF03-0AB0

CPU 313C-2 DP COMPACT CONTROLLER

Used with the applicable SIMATIC S7-300 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens official manufacturer documentation

*** SPARE PART*** SIMATIC S7-300, CPU 313C-2 PTP COMPACT CPU WITH MPI, 16 DI/16 DO, 3 FAST COUNTERS (30 KHZ), INTEGRATED INTERFACE RS485, INTEGRATED 24V DC POWER SUPPLY, 64 KBYTE WORKING MEMORY, FRONT CONNECTOR (1 X 40PIN) AND MICRO MEMORY CARD REQUIRED



Figure similar

General information	
Hardware product version	01
Firmware version	V2.6
Engineering with	
• Programming package	STEP 7 V5.3 SP2 or higher with HW update
Supply voltage	
Rated value (DC)	Yes
• 24 V DC	
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	Miniature circuit breaker, type C; min. 2 A; miniature circuit breaker type B, min. 4 A
Load voltage L+	
• Rated value (DC)	24 V
• permissible range, lower limit (DC)	20.4 V
• permissible range, upper limit (DC)	28.8 V
Digital inputs	

Load voltage L+	
— Rated value (DC)	24 V
— Reverse polarity protection	Yes
Digital outputs	
Load voltage L+	
— Rated value (DC)	24 V
— Reverse polarity protection	No
Input current	
Current consumption (rated value)	700 mA
Current consumption (in no-load operation), typ.	100 mA
Inrush current, typ.	11 A
I^2t	0.7 A ² ·s
Digital inputs	
• from load voltage L+ (without load), max.	70 mA
Digital outputs	
• from load voltage L+, max.	100 mA
Power loss	
Power loss, typ.	10 W
Memory	
Work memory	
• integrated	64 kbyte
• expandable	No
Load memory	
• Plug-in (MMC)	Yes
• Plug-in (MMC), max.	8 Mbyte
• Data management on MMC (after last programming), min.	10 y
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
• without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.1 μs
for bit operations, max.	0.2 μs
for word operations, typ.	0.2 μs
for fixed point arithmetic, typ.	2 μs
for floating point arithmetic, typ.	3 μs
CPU-blocks	
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
• Number, max.	511; Number range: 1 to 511

• Size, max.	16 kbyte
FB	
• Number, max.	1 024; Number range: 0 to 2047
• Size, max.	16 kbyte
FC	
• Number, max.	1 024; Number range: 0 to 2047
• Size, max.	16 kbyte
OB	
• Size, max.	16 kbyte
• Number of free cycle OBs	1; OB 1
• Number of time alarm OBs	1; OB 10
• Number of delay alarm OBs	1; OB 20
• Number of cyclic interrupt OBs	1; OB 35
• Number of process alarm OBs	1; OB 40
• Number of startup OBs	1; OB 100
• Number of asynchronous error OBs	4; OB 80, 82, 85, 87
• Number of synchronous error OBs	2; OB 121, 122
Nesting depth	
• per priority class	8
• additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
• Number	256
of which retentive without battery	
— can be set	Yes
— lower limit	0
— upper limit	255
— preset	8
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	8
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	

• Number	256
of which retentive without battery	
— adjustable	Yes
— lower limit	0
— upper limit	255
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
retentive data area in total	all
Flag	
• Number, max.	256 byte
• Retentivity available	Yes; MB 0 to MB 255
• Retentivity preset	MB 0 to MB 15
• Number of clock memories	8; 1 memory byte
Data blocks	
• Number, max.	511; Number range: 1 to 511
• Size, max.	16 kbyte
• Retentivity adjustable	Yes; via non-retain property on DB
• Retentivity preset	Yes
Local data	
• per priority class, max.	510 byte
Address area	
I/O address area	
• Inputs	1 kbyte
• Outputs	1 kbyte
of which distributed	
— Inputs	none
— Outputs	none
Process image	
• Inputs	128 byte
• Outputs	128 byte

Default addresses of the integrated channels	
— Digital inputs	124.0 to 125.7
— Digital outputs	124.0 to 125.7
Digital channels	
• Inputs	1 008
— of which central	1 008
• Outputs	1 008
— of which central	1 008
Analog channels	
• Inputs	248
— of which central	248
• Outputs	248
— of which central	248
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
• integrated	No
• via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	6
Rack	
• Racks, max.	4
• Modules per rack, max.	8; In rack 3 max. 7
Time of day	
Clock	
• Hardware clock (real-time)	Yes
• retentive and synchronizable	Yes
• Backup time	6 wk; At 40 °C ambient temperature
• Deviation per day, max.	10 s
Operating hours counter	
• Number	1
• Number/Number range	0
• Range of values	0 to 2 ³¹ hours (when using SFC 101)
• Granularity	1 hour
• retentive	Yes; Must be restarted at each restart
Clock synchronization	
• supported	Yes
• to MPI, master	Yes
• to MPI, slave	Yes