

SIMATIC S7-300,
 CPU 315F CENTRAL UNIT FOR S7-300F,
 192 KB WORKING MEM., 40MM WIDE,
 384 BYTES PAE/384 BYTES PAA,
 2 INTERFACES: 1 MPI UND 1 DP INTEGRATED 24V DC
 POWER SUPPLY,
 MICRO MEMORY CARD REQUIRED

General information	
Hardware product version	01
Firmware version	V2.6
Engineering with	
Programming package	STEP 7 V5.2 SP1 or higher with HSP 0126
Supply voltage	
24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
External protection for supply cables (recommendation)	2 A min.
Input current	
Current consumption (in no-load operation), typ.	60 mA
Inrush current, typ.	2.5 A
I ² t	0.5 A ² ·s
Power losses	
Power loss, typ.	2.5 W
Memory	
Type of memory	other
Work memory	
Integrated	192 kbyte ; The number of F-instructions compared to a standard program is limited due to the F-specific overheads; depending on the type of programming, about 36 K F-instructions are possible.
expandable	No
Load memory	
pluggable (MMC)	Yes
pluggable (MMC), max.	8 Mbyte
Backup	
present	Yes ; Guaranteed by MMC (maintenance-free)
CPU processing times	

for bit operations, typ.	0.1 µs
for word operations, typ.	0.2 µs
for fixed point arithmetic, typ.	2 µs
for floating point arithmetic, typ.	6 µs
CPU-blocks	
Number of blocks (total)	1024 ; DBs, FCs, FBs
DB	
Number, max.	1023 ; DB 0 reserved
Size, max.	16 kbyte
FB	
Number, max.	2048 ; see instruction list
Size, max.	16 kbyte
FC	
Number, max.	2048 ; see instruction list
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 time interrupt OBs	1 ; OB 35
Number of process alarm OBs	1 ; OB 40
Number of DPV1 alarm OBs	3 ; OB 55, 56, 57
Number of startup OBs	1 ; OB 100
Number of asynchronous error OBs	5 ; OB 80, 82, 85, 86, 87
Number of synchronous error OBs	1 ; 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
preset	Z 0 to Z 7
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
Retentivity	
can be set	Yes
preset	No retentivity
Time range	
lower limit	10 ms
upper limit	9990 s
IEC timer	
present	Yes
Type	SFB
Data areas and their retentivity	
retentive data area, total	all standard data
Flag	
Number, max.	2048 byte
Retentivity available	Yes ; MB 0 to MB 2047
Retentivity preset	MB 0 to MB 15
Number of clock memories	8 ; 1 memory byte
Data blocks	
Number, max.	1023 ; DB 0 reserved
Size, max.	16 kbyte
Local data	
per priority class, max.	1024 byte
Address area	
I/O address area	
Inputs	2 kbyte
Outputs	2 kbyte
of which, distributed	
Inputs	2 kbyte
Outputs	2 kbyte
Process image	
Inputs	384 byte
Outputs	384 byte
Digital channels	

Inputs	16384
Outputs	16384
Inputs, of which central	1024
Outputs, of which central	1024
Analog channels	
Inputs	1024
Outputs	1024
Inputs, of which central	256
Outputs, of which central	256
Hardware configuration	
Number of DP masters	
Integrated	1
Via CP	1
Number of operable FMs and CPs (recommended)	
FM	8
CP, point-to-point	8
CP, LAN	10
Rack	
Racks, max.	4
Modules per rack, max.	8
Time of day	
Clock	
Hardware clock (real-time clock)	Yes
battery-backed and synchronizable	Yes
Deviation per day, max.	10 s
Backup time	6 wk ; At 40 °C ambient temperature
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
to DP, master	Yes ; With DP slave only slave clock
to DP, slave	Yes

in AS, master	Yes
Digital inputs	
integrated channels (DI)	0
Digital outputs	
integrated channels (DO)	0
Analog inputs	
Integrated channels (AI)	0
Analog outputs	
Integrated channels (AO)	0
Interfaces	
Number of parallel interfaces	0
Number of 20 mA interfaces (TTY)	0
Number of RS 232 interfaces	0
Number of RS 422 interfaces	0
Number of other interfaces	0
1st interface	
Interface type	Integrated RS 485 interface
Physics	RS 485
Isolated	No
Power supply to interface (15 to 30 V DC), max.	200 mA
Functionality	
MPI	Yes
DP master	No
DP slave	No
Point-to-point connection	No
MPI	
Number of connections	16
Transmission rate, max.	187.5 kbit/s
Services	
PG/OP communication	Yes
Routing	Yes
Global data communication	Yes
S7 basic communication	Yes
S7 communication	Yes
S7 communication, as client	Yes ; Via CP and loadable FB
S7 communication, as server	Yes
2nd interface	
Interface type	Integrated RS 485 interface

Physics	RS 485
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	200 mA
Functionality	
MPI	No
DP master	Yes
DP slave	Yes
Point-to-point connection	No
DP master	
Number of connections, max.	16
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	125
Services	
PG/OP communication	Yes
Routing	Yes
Global data communication	No
S7 basic communication	No
S7 communication	No
Equidistance mode support	Yes
SYNC/FREEZE	Yes
DPV1	Yes
Address area	
Inputs, max.	244 kbyte
Outputs, max.	244 kbyte
DP slave	
Number of connections	16
GSD file	The latest GSD file is available at: http://www.siemens.com/profibus-gsd
Transmission rate, max.	12 Mbit/s
Address area, max.	32
User data per address area, max.	32 byte
Services	
PG/OP communication	Yes
Routing	Yes ; with interface active
Global data communication	No
S7 basic communication	No
S7 communication, as client	No
S7 communication, as server	No
Direct data exchange (slave-to-slave communication)	Yes

DPV1	No
Transfer memory	
Inputs	244 byte
Outputs	244 byte
Communication functions	
PG/OP communication	Yes
Global data communication	
supported	Yes
Number of GD packets, max.	8
Number of GD packets, transmitter, max.	8
Number of GD packets, receiver, max.	8
Size of GD packets, max.	22 byte
Size of GD packet (of which consistent), max.	22 byte
S7 basic communication	
supported	Yes
User data per job, max.	76 byte
User data per job (of which consistent), max.	76 byte ; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
S7 communication	
supported	Yes
as server	Yes
As client	Yes ; Via CP and loadable FB
User data per job, max.	180 byte ; With PUT/GET
User data per job (of which consistent), max.	64 byte ; as server
S5-compatible communication	
supported	Yes ; via CP and loadable FC
Number of connections	
overall	16
usable for PG communication	15
reserved for PG communication	1
Adjustable for PG communication, min.	1
Adjustable for PG communication, max.	15
usable for OP communication	15
reserved for OP communication	1
adjustable for OP communication, min.	1
adjustable for OP communication, max.	15
usable for S7 basic communication	12
Reserved for S7 basic communication	0
adjustable for S7 basic communication, min.	0

adjustable for S7 basic communication, max.	12
S7 message functions	
Number of login stations for message functions, max.	16 ; Depending on the configured connections for PG/OP and S7 basic communication
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	40
Test commissioning functions	
Status block	Yes
Single step	Yes
Number of breakpoints	2
Status/control	
Status/control variable	Yes
Variables	Inputs, outputs, memory bits, DB, times, counters
Number of variables, max.	30
of which status variables, max.	30
of which control variables, max.	14
Forcing	
Forcing	Yes
Force, variables	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	
present	Yes
Number of entries, max.	100
can be set	No
Configuration	
Configuration software	
STEP 7	Yes ; V5.1 SP6 or higher
programming	
Command set	see instruction list
Nesting levels	8
System functions (SFC)	see instruction list
System function blocks (SFB)	see instruction list
Programming language	
LAD	Yes
FBD	Yes
STL	Yes
SCL	Yes
Know-how protection	
User program protection/password protection	Yes

Dimensions

Width	40 mm
Height	125 mm
Depth	130 mm

Weights

Weight, approx.	290 g
Status	Oct 13, 2014