SIEMENS

Product data sheet 6AG1317-6FF04-2AB0

SIPLUS S7-300 CPU317F-2DP -25 ... +60 DEGREES C WITH CONFORMAL COATING BASED ON 6ES7317-6FF04 -0AB0 . CENTRAL PROCESSING UNIT WITH 1.5 MBYTE WORKING MEMORY,
1. INTERFACE MPI/DP 12MBIT/S,
2. INTERFACE DP-MASTER/SLAVE,
MICRO MEMORY CARD NECESSARY FOR USE WITH SOFTWARE OPTION S7 DISTRIBUTED SAFETY V5.2 SP1 AND HIGHER

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General information	
Hardware product version	01
Firmware version	V3.3
Engineering with	
Programming package	STEP 7 V5.5 + SP1 or higher or STEP7 V5.2 + SP1 or higher with HSP 202 + Distributed Safety
Supply voltage	
24 V DC	Yes
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	2 A min.
Input current	
Current consumption (rated value)	870 mA
Current consumption (in no-load operation), typ.	120 mA
Inrush current, typ.	4 A
I²t	1 A²·s
Power loss	
Power loss, typ.	4.5 W
Memory	

Type of memory	other
Work memory	
integrated	1536 kbyte
expandable	No
Size of retentive memory for retentive data blocks	256 kbyte
Load memory	
Plug-in (MMC)	Yes
Plug-in (MMC), max.	8 Mbyte
Data management on MMC (after last programming), min.	10 a
Backup	
present	Yes ; Guaranteed by MMC (maintenance-free)
without battery	Yes ; Program and data
CPU processing times	
for bit operations, typ.	0.025 µs
for word operations, typ.	0.03 µs
for fixed point arithmetic, typ.	0.04 µs
for floating point arithmetic, typ.	0.16 µs
CPU-blocks	
Number of blocks (total)	2048 ; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
Number, max.	2048 ; Number range: 1 to 16000
Size, max.	64 kbyte
FB	
Number, max.	2048 ; Number range: 0 to 7999
Size, max.	64 kbyte
FC	
Number, max.	2048 ; Number range: 0 to 7999
Size, max.	64 kbyte
OB	
Description	see instruction list
Size, max.	64 kbyte
Number of free cycle OBs	1 ; OB 1
Number of time alarm OBs	1 ; OB 10
Number of delay alarm OBs	2 ; OB 20, 21
Number of time interrupt OBs	4 ; OB 32, 33, 34, 35
Number of process alarm OBs	1 ; OB 40
Number of DPV1 alarm OBs	3 ; OB 55, 56, 57
Number of isochronous mode OBs	1 ; OB 61

Number of startup OBs	1 ; OB 100
Number of asynchronous error OBs	5 ; OB 80, 82, 85, 86, 87
Number of synchronous error OBs	2 ; OB 121, 122
Nesting depth	
per priority class	16
additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
Number	512
Retentivity	
adjustable	Yes
lower limit	0
upper limit	511
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	512
Retentivity	
adjustable	Yes
lower limit	0
upper limit	511
preset	No retentivity
Time range	
lower limit	10 ms
upper limit	9990 s
IEC timer	
present	Yes
Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
retentive data area, total	All, max. 256 KB
Flag	

Number, max.	4096 byte
Retentivity available	Yes ; From MB 0 to MB 4095
Retentivity preset	MB 0 to MB 15
Number of clock memories	8 ; 1 memory byte
Data blocks	
Number, max.	2048 ; Number range: 1 to 16000
Size, max.	64 kbyte
Retentivity adjustable	Yes ; via non-retain property on DB
Retentivity preset	Yes
Local data	
per priority class, max.	32768 byte ; Max. 2048 bytes per block
Address area	
I/O address area	
Inputs	8192 byte
Outputs	8192 byte
of which distributed	
Inputs	8192 byte
Outputs	8192 byte
Process image	
Inputs	8192 byte
Outputs	8192 byte
Inputs, adjustable	8192 byte
Outputs, adjustable	8192 byte
Inputs, default	1024 byte
Outputs, default	1024 byte
Subprocess images	
Number of subprocess images, max.	1
Digital channels	
Inputs	65536
Outputs	65536
Inputs, of which central	1024
Outputs, of which central	1024
Analog channels	
Inputs	4096
Outputs	4096
Inputs, of which central	256
Outputs, of which central	256
Hardware configuration	

Expansion devices, max.	3
Number of DP masters	
integrated	2
via CP	4
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 ; Typ.: 2 s
Backup time	6 wk ; At 40 °C ambient temperature
Behavior of the clock following POWER-ON	Clock continues running after POWER OFF
Behavior of the clock following expiry of backup period	Clock continues to run with the time at which the power failure occurred
Operating hours counter	
Number	4
Number/Number range	0 to 3
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
in AS, slave	Yes
on Ethernet via NTP	No
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
1. 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	Yes
DP master	Yes
DP slave	Yes
Point-to-point connection	No
MPI	
Transmission rate, max.	12 Mbit/s
Services	
PG/OP communication	Yes
Routing	Yes
Global data communication	Yes
S7 basic communication	Yes
S7 communication	Yes ; Only server, configured on one side
S7 communication, as client	No ; but via CP and loadable FB
S7 communication, as server	Yes ; Connection configured on one side only
DP master	
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124
Services	
PG/OP communication	Yes
Routing	Yes
Global data communication	No
S7 basic communication	Yes ; I blocks only
S7 communication	Yes ; Only server, configured on one side
S7 communication, as client	No
S7 communication, as server	Yes
Equidistance mode support	Yes
Isochronous mode	No
SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
Number of DP slaves that can be simultaneously activated/deactivated, max.	8

Direct data exchange (slave-to-slave communication)	Yes ; As subscriber
DPV1	Yes
Address area	
Inputs, max.	8 kbyte
Outputs, max.	8 kbyte
User data per DP slave	
Inputs, max.	244 byte
Outputs, max.	244 byte
DP slave	
Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes ; only with passive interface
Address area, max.	32
User data per address area, max.	32 byte
Services	
PG/OP communication	Yes
Routing	Yes ; Only with active interface
Global data communication	No
S7 basic communication	No
S7 communication	Yes ; Only server, configured on one side
S7 communication, as client	No
S7 communication, as server	Yes ; Connection configured on one side only
Direct data exchange (slave-to-slave communication)	Yes
DPV1	No
Transfer memory	
Inputs	244 byte
Outputs	244 byte
2. 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	
Transmission rate, max.	12 Mbit/s

Number of DP slaves, max.	124
Services	
PG/OP communication	Yes
Routing	Yes
Global data communication	No
S7 basic communication	Yes ; I blocks only
S7 communication	Yes ; Only server, configured on one side
S7 communication, as client	No ; but via CP and loadable FB
S7 communication, as server	Yes
Equidistance mode support	Yes
Isochronous mode	Yes ; OB 61
SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
Number of DP slaves that can be simultaneously activated/deactivated, max.	8
Direct data exchange (slave-to-slave communication)	Yes ; As subscriber
DPV1	Yes
Address area	
Inputs, max.	8192 byte
Outputs, max.	8192 byte
User data per DP slave	
Inputs, max.	244 byte
Outputs, max.	244 byte
DP slave	
GSD file	The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)
Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes ; only with passive interface
Address area, max.	32
User data per address area, max.	32 byte
Services	
PG/OP communication	Yes
Routing	Yes ; Only with active interface
Global data communication	No
S7 basic communication	No
S7 communication	Yes ; Only server, configured on one side
S7 communication, as client	No ; but via CP and loadable FB
S7 communication, as server	Yes
Direct data exchange (slave-to-slave communication)	Yes

DPV1	No
Transfer memory	
Inputs	244 byte
Outputs	244 byte
Communication functions	
PG/OP communication	Yes
Data record routing	Yes
Global data communication	
supported	Yes
Number of GD loops, max.	8
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.	See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)
S5 compatible communication	
supported	Yes ; via CP and loadable FC
Number of connections	
overall	32
usable for PG communication	31
reserved for PG communication	1
adjustable for PG communication, min.	1
adjustable for PG communication, max.	31
usable for OP communication	31
reserved for OP communication	1
adjustable for OP communication, min.	1
adjustable for OP communication, max.	31
usable for S7 basic communication	30

reserved for S7 basic communication	0
adjustable for S7 basic communication, min.	0
adjustable for S7 basic communication, max.	30
usable for routing	X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max. 14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14
S7 message functions	
Number of login stations for message functions, max.	32 ; Depending on the configured connections for PG/OP and S7 basic communication
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	300
Test commissioning functions	
Status block	Yes ; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
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
Forcing, variables	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	
present	Yes
Number of entries, max.	500
adjustable	No
of which powerfail-proof	100 ; Only the last 100 entries are retained
Number of entries readable in RUN, max.	499
adjustable	Yes ; From 10 to 499
preset	10
Service data	
can be read out	Yes
Standards, approvals, certificates	
CE mark	Yes
Ambient conditions	
Operating temperature	

min.	-25 °C ; = Tmin
max.	60 °C ; = Tmax
Extended ambient conditions	
relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m)
Relative humidity	
with condensation, tested in accordance with IEC 60068-2-38, maximum	100 % ; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
to biologically active substances/conformity with EN 60721-3-3	Yes ; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
to chemically active substances/conformity with EN 60721-3-3	Yes ; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
to mechanically active substances/conformity with EN 60721-3-3	Yes ; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!
Configuration	
Configuration software	
STEP 7	Yes ; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP 203
STEP 7 Lite	No
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
CFC	Yes
GRAPH	Yes
HiGraph®	Yes
Know-how protection	
User program protection/password protection	Yes
Block encryption	Yes ; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm

Depth	130 mm
Weights	
Weight, approx.	360 g
Status	Aug 5, 2014