SIEMENS

Data sheet

6AG1317-6FF04-2AB0



SIPLUS S7-300 CPU 317F-2DP based on 6ES7317-6FF04-0AB0 with conformal coating, -25...+60 °C, central processing unit with 1.5 MB work memory, 1st interface MPI/DP 12 Mbps, 2nd interface DP master/ slave, Micro Memory Card required can be used with software package S7 Distributed Safety V5.2 SP1 or higher

Figure similar

General information	
Engineering with	
Programming package	STEP 7 V5.5 + SP1 or higher or STEP 7 V5.2 + SP1 or higher with HSP 202 + Distributed Safety
Supply voltage	
Rated value (DC)	24 V
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 A ² ·s
Power loss	
Power loss, typ.	4.5 W
Memory	
Work memory	
integrated	1 536 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.	0.025 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)	2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
Number, max.	2 048; Number range: 1 to 16000
• Size, max.	64 kbyte

FB	
Number, max.	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
Number, max.	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
Number, max.	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 Number of qualic integrant OBs	2; OB 20, 21
Number of cyclic interrupt OBsNumber of process alarm OBs	4; OB 32, 33, 34, 35 1; OB 40
Number of process alarm OBs 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	540
Number Retentivity	512
— adjustable	Yes
— lower limit	0
— upper limit	511
— 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 (incl. timers, counters, flags), max.	256 kbyte
Flag	
• Size, max.	4 096 byte
Retentivity available	Yes; From MB 0 to MB 4 095
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity adjustableRetentivity preset	Yes; via non-retain property on DB Yes
Retentivity adjustable	

Address area	
I/O address area	
• Inputs	8 192 byte
• Outputs	8 192 byte
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	
• Inputs	8 192 byte
 Outputs 	8 192 byte
 Inputs, adjustable 	8 192 byte
 Outputs, adjustable 	8 192 byte
 Inputs, default 	1 024 byte
Outputs, default	1 024 byte
Subprocess images	
Number of subprocess images, max.	1
Digital channels	
• Inputs	65 536
— of which central	1 024
Outputs of which central	65 536
— of which central	1 024
Analog channels	4.006
• Inputs	4 096 256
— of which central● Outputs	4 096
Outputs — of which central	256
	230
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
• integrated	2
via CP Number of enership FMs and CPs (recommended)	4
Number of operable FMs and CPs (recommended) • FM	8
• CP, PtP	8
• CP, LAN	10
Rack	
• Racks, max.	4
Modules per rack, max.	8
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; Typ.: 2 s
Behavior of the clock following POWER-ON	Clock continues running after POWER OFF
Behavior of the clock following expiry of backup	the clock continues at the time of day it had when power was switched
period period	off
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 h
retentive	Yes; Must be restarted at each restart
Clock synchronization	
• supported	Yes
● to MPI, master	Yes
 to MPI, slave 	Yes
	Voc: With DD clave only clave clack
• to DP, master	Yes; With DP slave only slave clock
to DP, masterto DP, slave	Yes
to DP, masterto DP, slavein AS, master	Yes Yes
 to DP, master to DP, slave in AS, master in AS, slave 	Yes Yes Yes
to DP, masterto DP, slavein AS, master	Yes Yes

Number of logisal outputs Number of analog inputs Number of analog outputs Number of analog outputs Number of PROFINET interfaces Number of PROFINET interfaces Number of RS 422 interfaces Number of RS 422 interfaces O Number of RS 428 interfaces O Number of RS 485 interface Ves O OUtput current of the interface, max. PROFIBUS DP master O PROFIBUS DP islawe O PROFIBUS DP islawe O PROFIBUS DP islawe O PROFIBUS DP islawe O PROFIBUS DP master O PROFIBUS DP master O PROFIBUS DP islawe O PROFIBUS DP master O P	Number of digital inputs	0
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Number of RS 4485 interfaces 2		0
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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 Yes Isochronous mode No SYNC/FREEZE Yes Activation/deactivation of DP slaves Yes Number of DP slaves that can be simultaneously activated/deactivated, max. Direct data exchange (slave-to-slave communication) DPV1 Yes Address area Inputs, max. 8 kbyte User data per DP slave Inputs, max. 244 byte PROFIBUS DP slave Transmission rate, max. 12 Mbit/s		V
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— Outputs, max. 244 byte PROFIBUS DP slave ● Transmission rate, max. 12 Mbit/s	·	244 byte
PROFIBUS DP slave ● Transmission rate, max. 12 Mbit/s		•
automatic baud rate search Yes; only with passive interface	Transmission rate, max.	12 Mbit/s
	 automatic baud rate search 	Yes; only with passive interface
• Address area, max. 32	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 basic communication S7 communication	
	Yes; Only server, configured on one side No
— S7 communication, as client	
— 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	2.1.0,00
	Integrated DS 485 interface
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	Voc
• RS 485	Yes
Output current of the interface, max.	200 mA
Protocols	N-
• MPI	No
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes
Point-to-point connection	No
PROFIBUS 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	Yes
 Isochronous mode 	Yes; OB 61
— SYNC/FREEZE	Yes
 Activation/deactivation of DP slaves 	Yes
 Number of DP slaves that can be 	8
simultaneously activated/deactivated, max.	
 — Direct data exchange (slave-to-slave 	Yes; as subscriber
communication)	
— DPV1	Yes
Address area	
— Inputs, max.	8 192 byte
— Outputs, max.	8 192 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS 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

07	V 0 1 "
— 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	110
— Inputs	244 byte
— Outputs	244 byte
Protocols	
PROFIsafe	No
communication functions / header	110
	V
PG/OP communication	Yes Yes
Data record routing Global data communication	res
supported	Yes
 Number of GD loops, max. 	8
Number of GD packets, max.	8
Number of GD packets, fransmitter, max.	8
Number of GD packets, transmitter, max. 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
S5 compatible communication	the SFCs/FCs of S7 Communication)
supported	Yes; via CP and loadable FC
Number of connections	103, via or and loadable 10
• 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
— adjustable for OP communication, max.• usable for S7 basic communication	31 30
 usable for S7 basic communication 	30
 usable for S7 basic communication reserved for S7 basic communication 	30 0
 usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication, min. 	30 0 0 30 X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave
 usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication, min. adjustable for S7 basic communication, max. 	30 0 0 0 30 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)
 usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication, min. adjustable for S7 basic communication, max. usable for routing 	30 0 0 30 X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave
usable for S7 basic communication — reserved for S7 basic communication — adjustable for S7 basic communication, min. — adjustable for S7 basic communication, max. • usable for routing S7 message functions	30 0 0 30 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
 usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication, min. adjustable for S7 basic communication, max. usable for routing 	30 0 0 0 30 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)
usable for S7 basic communication — reserved for S7 basic communication — adjustable for S7 basic communication, min. — adjustable for S7 basic communication, max. • usable for routing S7 message functions	30 0 0 30 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 32; Depending on the configured connections for PG/OP and S7 basic
usable for S7 basic communication — reserved for S7 basic communication — adjustable for S7 basic communication, min. — adjustable for S7 basic communication, max. • usable for routing S7 message functions Number of login stations for message functions, max.	30 0 0 30 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 32; Depending on the configured connections for PG/OP and S7 basic communication
usable for S7 basic communication reserved for S7 basic communication adjustable for S7 basic communication, min. adjustable for S7 basic communication, max. usable for routing S7 message functions Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm-S blocks, max.	30 0 0 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 32; Depending on the configured connections for PG/OP and S7 basic communication Yes
usable for S7 basic communication — reserved for S7 basic communication — adjustable for S7 basic communication, min. — adjustable for S7 basic communication, max. • usable for routing S7 message functions Number of login stations for message functions, max. Process diagnostic messages	30 0 0 30 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 32; Depending on the configured connections for PG/OP and S7 basic communication Yes 300
usable for S7 basic communication — reserved for S7 basic communication — adjustable for S7 basic communication, min. — adjustable for S7 basic communication, max. • usable for routing S7 message functions Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block	30 0 0 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 32; Depending on the configured connections for PG/OP and S7 basic communication Yes
usable for S7 basic communication — reserved for S7 basic communication — adjustable for S7 basic communication, min. — adjustable for S7 basic communication, max. usable for routing S7 message functions Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step	30 0 0 30 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 32; Depending on the configured connections for PG/OP and S7 basic communication Yes 300 Yes; Up to 2 simultaneously
usable for S7 basic communication — reserved for S7 basic communication — adjustable for S7 basic communication, min. — adjustable for S7 basic communication, max. • usable for routing S7 message functions Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block	30 0 0 30 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 32; Depending on the configured connections for PG/OP and S7 basic communication Yes 300 Yes; Up to 2 simultaneously Yes
usable for S7 basic communication — reserved for S7 basic communication — adjustable for S7 basic communication, min. — adjustable for S7 basic communication, max. • usable for routing S7 message functions Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints	30 0 0 30 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 32; Depending on the configured connections for PG/OP and S7 basic communication Yes 300 Yes; Up to 2 simultaneously Yes
usable for S7 basic communication — reserved for S7 basic communication — adjustable for S7 basic communication, min. — adjustable for S7 basic communication, max. • usable for routing S7 message functions Number of login stations for message functions, max. Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control	30 0 0 30 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 32; Depending on the configured connections for PG/OP and S7 basic communication Yes 300 Yes; Up to 2 simultaneously Yes 4

- Number of veriables, may	20
Number of variables, max.	30
— of which status variables, max.	30
— of which control variables, max. Forcing	14
• 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
UL approval	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Use in hazardous areas	
• ATEX	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	-25 °C; = Tmin
• max.	60 °C; = Tmax
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	2 000 m
 Ambient air temperature-barometric pressure- 	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m)
altitude	
Relative humidity	
With condensation, tested in accordance with IEC	100 %; RH incl. condensation/frost (no commissioning under
60068-2-38, max.	condensation conditions)
Resistance	
Use in stationary industrial systems — to biologically active substances according to	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of
EN 60721-3-3	fauna); Class 3B3 on request
— to chemically active substances according to	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52
EN 60721-3-3	(severity degree 3); *
 to mechanically active substances according to 	Yes; Class 3S4 incl. sand, dust, *
EN 60721-3-3	
Use on ships/at sea	V 01 000 11 16 1 1 1 1 1 1 1 1 1 1 1 1 1
 to biologically active substances according to EN 60721-3-6 	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on
to chemically active substances according to	request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52
EN 60721-3-6	(severity degree 3); *
— to mechanically active substances according to	Yes; Class 6S3 incl. sand, dust; *
EN 60721-3-6	
Usage in industrial process technology	
 Against chemically active substances acc. to EN 60654-4 	Yes; Class 3 (excluding trichlorethylene)
Environmental conditions for process,	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas
measuring and control systems acc. to ANSI/ISA-	concentrations up to the limits of EN 60721-3-3 class 3C4 permissible);
71.04	level LC3 (salt spray) and level LB3 (oil)
Remark	
Note regarding classification of environmental	* The supplied plug covers must remain in place over the unused
conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	interfaces during operation!
configuration / header	
Configuration software	Voc. CTED 7 1/5 5 + CD1 or higher or CTED 7 1/5 2 + CD2 or high
• STEP 7	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with

	HODOO	
	HSP 203	
• STEP 7 Lite	No	
configuration / programming / header		
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	
last modified:	8/24/2021 🗗	