## **SIEMENS**

Product data sheet 6ES7315-1AF03-0AB0

SIMATIC S7-300, CPU 315 CPU WITH INTEGRATED 24 V DC POWER SUPPLY, 48 KBYTE WORKING MEMORY

Supply voltage		
Rated value (DC)	24 V	
permissible range, lower limit (DC)	20.4 V	
permissible range, upper limit (DC)	28.8 V	
Input current		
Rated value at 24 V DC	1000 mA	
Inrush current, max.	8 A	
Power loss		
Power loss, max.	8 W	
Memory		
Work memory		
integrated	48 kbyte ; 48 KB / 16K instructions RAM (integrated)	
Load memory		
expandable FEPROM	Yes ; Flash-EPROM	
expandable FEPROM, max.	4 Mbyte	
integrated RAM, max.	80 kbyte	
Backup		
present	Yes	
with battery	Yes ; all blocks	
without battery	Yes ; 4 KB: bit memory, counter, times and data	
CPU processing times		
for bit operations, typ.	0.3 µs	
for bit operations, max.	0.6 µs	
for word operations, typ.	1 μs	
for fixed point arithmetic, typ.	2 μs	
for floating point arithmetic, typ.	50 μs	
for timer/counter operations, typ.	12 µs	
CPU-blocks		
DB		
Number, max.	255	

Size, max.	16 kbyte
FB	
Number, max.	192
Size, max.	16 kbyte
FC	10 KDyte
	192
Number, max.	
Size, max.	16 kbyte
ОВ	
Description	see instruction list
Size, max.	16 kbyte
Number of free cycle OBs	1; OB 1
Number of time alarm OBs	1 ; OB 10
Number of time interrupt OBs	1 ; OB 35
Number of process alarm OBs	1 ; OB 40
Number of startup OBs	1 ; OB 100
Nesting depth	
per priority class	8
Counters, timers and their retentivity	
S7 counter	
Number	64
of which retentive with battery	
adjustable	Yes
lower limit	0
upper limit	63
of which retentive without battery	
adjustable	Yes
lower limit	0
upper limit	63
Counting range	
lower limit	1
upper limit	999
S7 times	
Number	128
of which retentive with battery	
adjustable	Yes
lower limit	0
upper limit	127
of which retentive without battery	
C. Willow Fotomire Wallout Ballory	

adivatable	Ver
adjustable	Yes
lower limit	0
upper limit	127
Time range	
lower limit	10 ms
upper limit	9990 s
Data areas and their retentivity	
Flag	
Number, max.	256 byte
Retentivity available	Yes ; MB 0 to MB 255
of which retentive with battery	0 to 2047 (M 0.0 to M 255.7, adjustable)
of which retentive without battery	0 to 2047 (M 0.0 to M 255.7, adjustable)
Address area	
I/O address area	
Inputs	256 byte
Outputs	256 byte
Process image	
Inputs	128 byte
Outputs	128 byte
Digital channels	
Inputs	1024
Outputs	1024
Inputs, of which central	1024
Outputs, of which central	1024
Analog channels	
Inputs	256
Outputs	256
Inputs, of which central	256
Outputs, of which central	128
Addressing volume	
Inputs	122 byte
Outputs	122 byte
Hardware configuration	
Number of modules per DP slave interface, max.	32
Expansion devices, max.	3
connectable programming devices/PCs	PGs/PCs with STEP 7 connectable via MPI interface
Number of DP masters	
integrated	0

via CP	1 ; CP 342-5
Number of operable FMs and CPs (recommended)	., 6. 6.2 5
FM	8
CP, point-to-point	4
CP, LAN	2
Rack	
Modules per rack, max.	32
Time of day	
Clock	
Hardware clock (real-time clock)	Yes
Interfaces	
MPI	
Cable length, max.	9100 m; without repeaters: 50 m; with 2 repeaters: 1100 m; with 10 repeaters in series: 9100 m; via fiber optic cable: 23.8 km (with 16 star hubs or OLMs)
1. Interface	
Functionality	
MPI	Yes
MPI	
Number of nodes, max.	32
Transmission rate, max.	187.5 kbit/s
Services	
PG/OP communication	Yes
Global data communication	Yes
S7 basic communication	Yes
S7 communication	Yes
DP master	
User data per DP slave	
User data per DP slave, max.	122 byte
Communication functions	
PG/OP communication	Yes
Global data communication	
supported	Yes
S7 basic communication	
supported	Yes
S7 communication	
supported	Yes
as server	Yes

Standard communication (FMS) supported Yes : via loadable blocks  Number of connections overall of which dynamic 8 d which static  Configuration Software  STEP 7 Yes : V5.0  Programming  Command set Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, companing, shifting, rottaing, complementation, calling blocks, fixed point arithmetic, liump functions  Nesting levels 8 Program organization Linear, structured System functions (SFC) Interrupt and error processing, copy data, clock functions, diagnosting, inclining, more program pr	S5 compatible communication	
supported  Number of connections  overall  of which dynamic  of which static  Configuration software  STEP 7  Yes: V5.0  Programming  Command set  Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotting, complementation, calling blocks, fixed point arithmetic, floating point arithmetic, jump functions  Nesting levels  Program organization  Nesting levels  Programming Linear, structured  System functions (SFC)  Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions  Programming language  LAD  Yes  FBD  Yes  STL  Yes  SCL  CFC  GRAPH  Yes  Software libraries  Process diagnostics  Yes  Software libraries  Process diagnostics  Yes  Software controller  Yes: depending on the required memory space and the resulting execution time  Know-how protection  User program protection/password protection  Yes  Cycle time monitoring  Lower limit  1 ms  upper limit  6000 ms  adjustable	supported	Yes ; via loadable blocks
Number of connections overall  of which dynamic of which static  Configuration  Configuration software  STEP 7 Yes; V5.0  Programming  Command set  Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, floating point arithmetic, ump functions  Nesting levels  8  Program organization  Linear, structured  System functions (SFC)  Interrupt and error processing, copy data, clock functions, diagnosting functions, module parameterization, operating mode transitions  Programming language  LAD  Yes  FBD  Yes  STL  Yes  SCL  Yes  GRAPH  HiGraph®  Yes  Software libraries  Process diagnostics  Yes  Software controller  Ves: depending on the required memory space and the resulting execution time  Know-how protection  User program protection/password protection  Yes  Cycle time monitoring  Lower limit  1 ms  upper limit  4000 ms  adjustable	Standard communication (FMS)	
overall  of which dynamic  of which static  Configuration  Configuration software  STEP 7 Yes; V5.0  Programming  Command set  Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, floating point arithmetic, jump functions  Nesting levels  8 Program organization  Linear, structured  System functions (SFC)  Interrupt and error processing, copy data, clock functions, diagnosting functions, module parameterization, operating mode transitions  Programming language  LAD  Yes  STL  Yes  SCL  Yes  GRAPH  HiGraph®  Yes  Software libraries  Process diagnostics  Yes  Software controller  Ves; depending on the required memory space and the resulting execution time  Know-how protection  User program protection/password protection  Yes  Cycle time monitoring  Lower limit  1 ms  6000 ms  adjustable  Yes	supported	Yes ; via loadable blocks
of which dynamic of which static  Configuration  Configuration software  STEP 7 Yes; V5.0  Programming  Command set  Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, floating poin arithmetic, jump functions  Nesting levels  Program organization  Linear, structured  System functions (SFC)  Interrupt and error processing, copy data, clock functions, diagnostif functions, module parameterization, operating mode transitions  Programming language  LAD  Yes  FBD  Yes  STL  Yes  SCL  CFC  Yes  GRAPH  Yes  HiGraph®  Yes  Software libraries  Process diagnostics  Yes  Software controller  Know-how protection  User program protection/password protection  Ves  Cycle time monitoring  Lower limit  1 ms  6000 ms  adjustable  Yes	Number of connections	
of which static  Configuration  Configuration software  STEP 7 Yes; V5.0  Programming  Command set  Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotaling, complementation, calling blocks, fixed point arithmetic, floating poin arithmetic, jump functions  Nesting levels  Program organization  Linear, structured  System functions (SFC)  Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions  Programming language  LAD  Yes  FBD  Yes  STL  Yes  SCL  CFC  Yes  GRAPH  Yes  HiGraph®  Yes  Software libraries  Process diagnostics  Yes  Software controller  Know-how protection  User program protection/password protection  Ves  Cycle time monitoring  Lower limit  1 ms  4  6000 ms  adjustable	overall	
Configuration  Configuration software  STEP 7 Yes; V5.0  Programming  Command set  Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, floating point arithmetic, jump functions  Nesting levels  Program organization  Linear, structured  Linear, structured  Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions  Programming language  LAD Yes  FBD Yes  STL Yes  SCL Yes  GRAPH Yes  HiGraph® Yes  Software libraries  Process diagnostics Yes  Software controller  Ves; depending on the required memory space and the resulting execution time  Know-how protection  User program protection/password protection  Ves  Cycle time monitoring  lower limit  1 ms  upper limit  6000 ms  adjustable  Yes	of which dynamic	8
STEP 7 Yes ; V5.0  Programming  Command set  Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shiring, rotating, complementation, calling blocks, fixed point arithmetic, floating point arithmetic, jump functions  Nesting levels  Program organization  Linear, structured  Linear, structured  Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions  Programming language  LAD Yes  FBD Yes  STL Yes  SCL CFC GRAPH Yes  GRAPH HiGraph® Yes  Software libraries  Process diagnostics Yes  Software controller Yes ; depending on the required memory space and the resulting execution time  Know-how protection User program protection/password protection  Ves  Cycle time monitoring  lower limit 1 ms  upper limit 6000 ms  adjustable  Yes	of which static	4
STEP 7	Configuration	
Programming  Command set  Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, floating poin arithmetic, jump functions  Nesting levels  Program organization  Linear, structured  System functions (SFC)  Interrupt and error processing, copy data, clock functions, diagnostif functions, module parameterization, operating mode transitions  Programming language  LAD  Yes  STL  Yes  SCL  Yes  SCL  Yes  GRAPH  Yes  HiGraph®  Yes  Software libraries  Process diagnostics  Yes  Software controller  Yes; depending on the required memory space and the resulting execution time  Know-how protection  User program protection/password protection  Yes  Cycle time monitoring  lower limit  upper limit  adjustable  Process diagnostics  Yes  6000 ms	Configuration software	
Command set  Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, loating poin arithmetic, jump functions  Nesting levels  8  Program organization  Linear, structured  System functions (SFC)  Interrupt and error processing, copy data, clock functions, diagnostif functions, module parameterization, operating mode transitions  Programming language  LAD  Yes  FBD  Yes  STL  Yes  SCL  Yes  CFC  Yes  GRAPH  Yes  HiGraph®  Yes  Software libraries  Process diagnostics  Yes  Software controller  Yes; depending on the required memory space and the resulting execution time  Know-how protection  User program protection/password protection  Yes  Cycle time monitoring  lower limit  1 ms  upper limit  6000 ms  adjustable  Yes	STEP 7	Yes ; V5.0
saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, floating poin arithmetic, jump functions  Nesting levels  Program organization  Linear, structured  System functions (SFC)  Interrupt and error processing, copy data, clock functions, diagnost functions, module parameterization, operating mode transitions  Programming language  LAD  Yes  FBD  Yes  STL  Yes  SCL  Yes  CFC  Yes  GRAPH  Yes  HiGraph®  Yes  Software libraries  Process diagnostics  Yes  Software controller  Yes; depending on the required memory space and the resulting execution time  Know-how protection  User program protection/password protection  Yes  Cycle time monitoring  lower limit  1 ms  upper limit  6000 ms  adjustable  Yes	Programming	
Program organization  System functions (SFC)  Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions  Programming language  LAD  Yes  FBD  Yes  STL  Yes  SCL  Yes  GRAPH  HiGraph®  Yes  Software libraries  Process diagnostics  Yes  Software controller  Know-how protection  User program protection/password protection  Ves  Cycle time monitoring  lower limit  upper limit  adjustable  Linear, structured  Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions  Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions  Yes  Yes  Yes  Yes  Yes  Soft Yes  Software libraries  Yes  A manual A metable  Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions, diagnostic functions, module parameterization, operating mode transitions  Yes  The program functions, module parameterization, operating mode transitions  Yes  The program functions, module parameterization, operating mode transitions  Yes	Command set	saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, floating point
System functions (SFC)  Interrupt and error processing, copy data, clock functions, diagnostif functions, module parameterization, operating mode transitions  Programming language  LAD  Yes  FBD  Yes  STL  Yes  SCL  Yes  GRAPH  HiGraph®  Yes  Software libraries  Process diagnostics  Yes  Software controller  Know-how protection  User program protection/password protection  Ves  Cycle time monitoring  lower limit  upper limit  adjustable  Interrupt and error processing, copy data, clock functions, diagnostif functions, module parameterization, operating mode transitions  Yes  Yes  Yes  Yes  Yes  Yes  Software controller  Yes ; depending on the required memory space and the resulting execution time  Know-how protection  Yes  Cycle time monitoring  lower limit  4 ms  6000 ms	Nesting levels	8
Frogramming language  LAD Yes FBD Yes STL Yes SCL Yes GRAPH HiGraph® Yes Software libraries Process diagnostics Yes Software controller  Know-how protection User program protection/password protection Ves Cycle time monitoring lower limit upper limit upper limit adjustable  Pes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	Program organization	Linear, structured
FBD Yes  STL Yes  SCL Yes  CFC Yes  GRAPH Yes  HiGraph® Yes  Software libraries  Process diagnostics Yes; depending on the required memory space and the resulting execution time  Know-how protection User program protection/password protection  Cycle time monitoring  lower limit 1 ms  upper limit 6000 ms  adjustable Yes	System functions (SFC)	
FBD Yes  STL Yes  SCL Yes  CFC Yes  GRAPH Yes  HiGraph® Yes  Software libraries  Process diagnostics Yes  Software controller Yes; depending on the required memory space and the resulting execution time  Know-how protection  User program protection/password protection Yes  Cycle time monitoring  lower limit 1 ms  upper limit 6000 ms  adjustable Yes	Programming language	
STL SCL Yes CFC Yes GRAPH Yes HiGraph® Yes  Software libraries  Process diagnostics Yes; depending on the required memory space and the resulting execution time  Know-how protection User program protection/password protection Ves Cycle time monitoring lower limit upper limit adjustable Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	LAD	Yes
SCL CFC Yes GRAPH Yes HiGraph® Yes  Software libraries Process diagnostics Process diagnostics Yes; depending on the required memory space and the resulting execution time  Know-how protection User program protection/password protection Ves Cycle time monitoring lower limit upper limit quipted food ms adjustable Yes	FBD	Yes
CFC GRAPH Yes HiGraph® Yes Software libraries  Process diagnostics Yes Software controller Yes; depending on the required memory space and the resulting execution time  Know-how protection User program protection/password protection Ves Cycle time monitoring lower limit upper limit adjustable Yes	STL	Yes
GRAPH HiGraph® Yes  Software libraries  Process diagnostics Yes  Software controller Yes; depending on the required memory space and the resulting execution time  Know-how protection User program protection/password protection  Cycle time monitoring lower limit upper limit adjustable Yes	SCL	Yes
HiGraph® Yes  Software libraries  Process diagnostics Yes  Software controller Yes ; depending on the required memory space and the resulting execution time  Know-how protection  User program protection/password protection Yes  Cycle time monitoring  lower limit 1 ms  upper limit 6000 ms  adjustable Yes	CFC	Yes
Software libraries Process diagnostics Yes Software controller Yes; depending on the required memory space and the resulting execution time  Know-how protection User program protection/password protection Yes  Cycle time monitoring lower limit upper limit 6000 ms adjustable Yes	GRAPH	Yes
Process diagnostics  Software controller  Yes ; depending on the required memory space and the resulting execution time  Know-how protection  User program protection/password protection  Cycle time monitoring  lower limit  upper limit  follow ms  adjustable  Yes	HiGraph®	Yes
Software controller  Yes; depending on the required memory space and the resulting execution time  Know-how protection  User program protection/password protection  Yes  Cycle time monitoring  lower limit  1 ms  upper limit  6000 ms  adjustable  Yes	Software libraries	
Execution time  Know-how protection  User program protection/password protection  Cycle time monitoring  lower limit  upper limit  adjustable  execution time  Yes   Yes  Yes	Process diagnostics	Yes
User program protection/password protection  Cycle time monitoring  lower limit 1 ms  upper limit 6000 ms  adjustable Yes	Software controller	
Cycle time monitoring  lower limit 1 ms  upper limit 6000 ms  adjustable Yes	Know-how protection	
lower limit 1 ms upper limit 6000 ms adjustable Yes	User program protection/password protection	Yes
upper limit 6000 ms adjustable Yes	Cycle time monitoring	
adjustable Yes	lower limit	1 ms
	upper limit	6000 ms
preset 150 ms	adjustable	Yes
	preset	150 ms

Width	80 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	530 g ; Memory card 16 g
Status	Aug 30, 2014