

Siemens SIMATIC S7-300 Training KIT



Siemens PLC S7-300 (CPU 315 – 2 DP) + Profibus + Power Supply unit + 40 inputs / 40 outputs + rack in working condition good for big project or training.

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Data sheet

6EP1333-1SL11



SITOP power 5 A, Basic line Stabilized power supply input: 120/230 V AC, output: 24 V DC/5 A S7-300 Design

Product	
Article Number (Market Facing Number)	6EP1333-1SL11
Product Description	SITOP power 5 A, Basic line Stabilized power supply input: 120/230 V AC, output: 24 V DC/5 A S7-300 Design
Product Lifecycle (PLM)	PM500:Discontinued Product or end of PLM & Support
Delivery information	
Export Control Regulations	ECCN : N / AL : N
Standard lead time ex-works	On request
Net Weight (kg)	0.700 Kg
Packaging Dimension	17.00 x 9.00 x 13.00
Package size unit of measure	CM
Quantity Unit	0 Piece
Packaging Quantity	1
Additional Product Information	
EAN	4025515150015
UPC	783087177550
Commodity Code	85044090
LKZ_FDB/ CatalogID	KT10-PA
Product Group	4741
Group Code	R315
Country of origin	Romania
Compliance with the substance restrictions according to RoHS directive	not available
Product class	A: Standard product which is a stock item could be returned within the returns guidelines/period.
WEEE (2012/19/EU) Take-Back Obligation	Yes

Data sheet

6ES7315-2AF03-0AB0



Siemens Simatic S7-300 6ES7315-2AF03-0AB0 CPU 315-2DP WITH INTEGRATED 24 V DC POWER SUPPLY, 64 KBYTE WORKING MEMORY 2ND INTERFACE DP-MASTER/SLAVE

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	
Current consumption (rated value)	1 000 mA
Inrush current, typ.	8 A
Power loss	
Power loss, typ.	8 W
Memory	
Work memory	
<ul style="list-style-type: none"> integrated 	64 kbyte; 64 KB / 21K instructions RAM (integrated)
Backup	
<ul style="list-style-type: none"> with battery 	Yes; all blocks
<ul style="list-style-type: none"> without battery 	Yes; 4 KB: bit memory, counter, times and data
CPU processing times	
for bit operations, typ.	0.3 μ s
for bit operations, max.	0.6 μ s
for word operations, typ.	1 μ s
for fixed point arithmetic, typ.	2 μ s
for floating point arithmetic, typ.	50 μ s
for timer/counter operations, typ.	12 μ s
CPU-blocks	
DB	
<ul style="list-style-type: none"> Number, max. 	255
<ul style="list-style-type: none"> Size, max. 	16 kbyte
FB	
<ul style="list-style-type: none"> Number, max. 	192

● Size, max.	16 kbyte
FC	
● Number, max.	192
● Size, max.	16 kbyte
OB	
● Number, max.	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 cyclic interrupt OBs	1; OB 35
● Number of process alarm OBs	1; OB 40
● Number of startup OBs	1; OB 100
Hardware configuration	
Number of expansion units, max.	3
connectable programming devices/PCs	PGs/PCs with STEP 7 connectable via MPI interface
Number of modules per DP slave interface, max.	64
Interfaces	
MPI	
● Cable length, max.	9 100 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)
Configuration	
Configuration software	
● STEP 7	Yes; STEP 7 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, diagnostic functions, module parameterization, operating mode transitions
Cycle time monitoring	
● lower limit	1 ms
● upper limit	6 000 ms
● adjustable	Yes
● preset	150 ms
Dimensions	
Width	80 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	530 g; Memory card 16 g

Data sheet

6ES7321-1BH01-0AA0



SIMATIC S7-300, DIGITAL INPUT SM 321, OPTICALLY ISOLATED, 16DI, 24 V DC, 20 PIN

Product	
Article Number (Market Facing Number)	6ES7321-1BH01-0AA0
Product Description	SIMATIC S7-300, DIGITAL INPUT SM 321, OPTICALLY ISOLATED, 16DI, 24 V DC, 20 PIN
Product Lifecycle (PLM)	PM500:Discontinued Product or end of PLM & Support
PLM Effective Date	End of product lifecycle since: 01.10.04
Successor information	
Successor	<u>6ES7321-1BH02-0AA0</u>
Successor Description	SIMATIC S7-300, Digital input SM 321, isolated, 16 DI, 24 V DC, 1x 20-pole
Delivery information	
Export Control Regulations	ECCN : N / AL : N
Transfer time EC Germany	On request
Net Weight (kg)	0.240 Kg
Quantity Unit	0 Piece
Packaging Quantity	1
Additional Product Information	
EAN	4025515060734
CatalogID	ST9-E5
Group Code	R111

Data sheet

6ES7322-1BH01-0AA0



Figure similar

SIMATIC S7-300, Digital output SM 322, isolated, 16 DO, 24 V DC, 0.5A, 1x 20-pole, Total current 4 A/group (8 A/module)

Supply voltage	
Load voltage L+	
• Rated value (DC)	24 V
• permissible range, lower limit (DC)	20.4 V
• permissible range, upper limit (DC)	28.8 V
Input current	
from load voltage L+ (without load), max.	80 mA
from backplane bus 5 V DC, max.	80 mA
Power loss	
Power loss, typ.	4.9 W
Digital outputs	
Number of digital outputs	16
Short-circuit protection	Yes; Electronic
• Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	L+ (-53 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
• on lamp load, max.	5 W
Load resistance range	
• lower limit	48 Ω
• upper limit	4 kΩ
Output voltage	
• for signal "1", min.	L+ (-0.8 V)
Output current	
• for signal "1" rated value	0.5 A
• for signal "1" permissible range for 0 to 40 °C, min.	5 mA
• for signal "1" permissible range for 0 to 40 °C, max.	0.6 A
• for signal "1" permissible range for 40 to 60 °C, min.	5 mA
• for signal "1" permissible range for 40 to 60 °C, max.	0.6 A
• for signal "1" minimum load current	5 mA
• for signal "0" residual current, max.	0.5 mA
Output delay with resistive load	
• "0" to "1", max.	100 μs
• "1" to "0", max.	500 μs
Parallel switching of two outputs	
• for uprating	No

• for redundant control of a load	Yes
Switching frequency	
• with resistive load, max.	100 Hz
• with inductive load, max.	0.5 Hz
• with inductive load (acc. to IEC 60947-5-1, DC13), max.	0.5 Hz
• on lamp load, max.	10 Hz
Total current of the outputs (per group)	
horizontal installation	
— up to 40 °C, max.	4 A
— up to 60 °C, max.	3 A
vertical installation	
— up to 40 °C, max.	2 A
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Interrupts/diagnostics/status information	
Alarms	No
Diagnostics function	No
Alarms	
• Diagnostic alarm	No
Diagnoses	
• Wire-break	No
• Short-circuit	No
• Fuse blown	No
• missing load voltage	No
Diagnostics indication LED	
• Rated load voltage PWR (green)	No
• Fuse OK FSG (green)	No
• Status indicator digital output (green)	Yes
Potential separation	
Potential separation digital outputs	
• between the channels	Yes
• between the channels, in groups of	8
• between the channels and backplane bus	Yes; Optocoupler
Isolation	
Isolation tested with	500 V DC
Connection method	
required front connector	20-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	190 g

Data sheet

6ES7323-1BH01-0AA0



SIMATIC S7-300, Digital module SM 323, isolated, 8DI and 8DO, 24 V DC, 0.5 A Total current 2A, 1x 20-pole

Figure similar

Supply voltage	
Load voltage L+	
• Rated value (DC)	24 V
• permissible range, lower limit (DC)	20.4 V
• permissible range, upper limit (DC)	28.8 V
Input current	
from load voltage L+ (without load), max.	40 mA
from backplane bus 5 V DC, max.	40 mA
Power loss	
Power loss, typ.	3.5 W
Digital inputs	
Number of digital inputs	8
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Number of simultaneously controllable inputs	
horizontal installation	
— up to 60 °C, max.	8
vertical installation	
— up to 40 °C, max.	8
Input voltage	
• Type of input voltage	DC
• Rated value (DC)	24 V
• for signal "0"	-30 to +5 V
• for signal "1"	13 to 30V
Input current	
• for signal "1", typ.	7 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— at "0" to "1", min.	1.2 ms
— at "0" to "1", max.	4.8 ms
— at "1" to "0", min.	1.2 ms
— at "1" to "0", max.	4.8 ms
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Digital outputs	

Number of digital outputs	8
Short-circuit protection	Yes
• Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	L+ (-53 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
• on lamp load, max.	5 W
Load resistance range	
• lower limit	48 Ω
• upper limit	4 kΩ
Output voltage	
• for signal "1", min.	L+ (-0.8 V)
Output current	
• for signal "1" rated value	0.5 A
• for signal "1" permissible range, min.	5 mA
• for signal "1" permissible range, max.	0.6 A
• for signal "1" minimum load current	5 mA
• for signal "0" residual current, max.	0.5 mA
Output delay with resistive load	
• "0" to "1", max.	100 μs
• "1" to "0", max.	500 μs
Parallel switching of two outputs	
• for uprating	No
• for redundant control of a load	Yes; only outputs of the same group
Switching frequency	
• with resistive load, max.	100 Hz
• with inductive load, max.	0.5 Hz
• with inductive load (acc. to IEC 60947-5-1, DC13), max.	0.5 Hz
• on lamp load, max.	10 Hz
Total current of the outputs (per group)	
horizontal installation	
— up to 40 °C, max.	4 A
— up to 60 °C, max.	4 A
vertical installation	
— up to 40 °C, max.	4 A
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	2 mA
Interrupts/diagnostics/status information	
Alarms	No
Diagnostics function	No
Diagnostics indication LED	
• Status indicator digital input (green)	Yes
• Status indicator digital output (green)	Yes
Potential separation	
Potential separation digital inputs	
• between the channels	Yes
• between the channels, in groups of	8
• between the channels and backplane bus	Yes; Optocoupler
Potential separation digital outputs	
• between the channels	Yes
• between the channels, in groups of	8

• between the channels and backplane bus	Yes; Optocoupler
Isolation	
Isolation tested with	500 V DC
Connection method	
required front connector	20-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	220 g

Data sheet

6ES7141-3BH00-0XA0

SIMATIC DP, Basic module BM 141 ET 200ECO: 16 DI 24 V DC;
8xM12, Duplicate assignment, Degree of protection IP65/67;
Connection block 6ES7194-3AA00-0.A0 separately order



General information	
Vendor identification (VendorID)	80DAh
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Input current	
from supply voltage 1L+, max.	70 mA; Typical
Encoder supply	
Number of outputs	8
Type of output voltage	24 V DC
Short-circuit protection	Yes; Electronic
Output current	
• Rated value	1 A; Aggregate current up to 55 °C
Power loss	
Power loss, typ.	3.6 W

Digital inputs	
Number of digital inputs	16
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 55 °C, max.	16
Input voltage	
• Type of input voltage	DC
• Rated value (DC)	24 V
• for signal "0"	-3 to +5V
• for signal "1"	13 to 30V
Input current	
• for signal "1", typ.	7 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— at "0" to "1", max.	3 ms; Typical
— at "1" to "0", max.	3 ms; Typical
Cable length	
• unshielded, max.	30 m
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
Interfaces	
PROFIBUS DP	
• Transmission rate, max.	12 Mbit/s; 9,6 / 19,2 / 45,45 / 93,75 / 187,5 / 500 kbit/s; 1,5 / 3 / 6 / 12 Mbit/s
Protocols	
PROFIBUS DP	Yes
Interrupts/diagnostics/status information	
Alarms	No
Diagnostic messages	
• Diagnostic information readable	Yes
Diagnostics indication LED	
• Group error SF (red)	Yes
• Status indicator digital input (green)	Yes
• Channel fault indicator F (red)	No
Potential separation	

between PROFIBUS DP and all other circuit components	Yes
Potential separation digital inputs	
• between the channels	No
Permissible potential difference	
between different circuits	75 V DC/60 V AC
Isolation	
Isolation tested with	500 V DC
Degree and class of protection	
IP degree of protection	IP65/67
Standards, approvals, certificates	
Suitable for safety functions	No
Connection method	
Design of electrical connection	4/5-pin M12 circular connectors
Dimensions	
Width	60 mm
Height	210 mm
Depth	28 mm
Weights	
Weight, approx.	210 g