

SIMATIC S7-300

Digital modules

SM 322 digital output modules

4

Technical specifications (continued)

	6ES7 322-1BH01-0AA0	6ES7 322-1BH10-0AA0	6ES7 322-1BL00-0AA0	6ES7 322-8BF00-0AB0	6ES7 322-5GH00-0AB0	6ES7 322-1CF00-0AA0
Output current (continued)						
• for signal "1" minimum load current	5 mA	5 mA	5 mA	10 mA		10 mA
• for signal "1" permissible peak current, max.					1.5 A; for 50 ms, 1 A ² s one-time	3 A; for 10 ms
• for signal "0" residual current, max.	0.5 mA	0.5 mA	0.5 mA	0.5 mA	10 µA	0.5 mA
Switching frequency						
• with resistive load, max.	100 Hz	1,000 Hz	100 Hz	100 Hz	10 Hz	25 Hz
• with inductive load, max.	0.5 Hz	0.5 Hz	0.5 Hz	2 Hz		0.5 Hz
• on lamp load, max.	10 Hz	10 Hz	10 Hz	10 Hz	0.5 Hz	10 Hz
Aggregate current of the outputs (per group)						
• vertical installation - up to 40 °C, max.	2 A	2 A	2 A	4 A		4 A
• horizontal installation - up to 40 °C, max.	4 A	4 A	4 A	4 A		6 A
- up to 50 °C, max.						4 A
- up to 60 °C, max.	3 A	3 A	3 A	3 A	0.5 A	3 A
• all other mounting positions - up to 40 °C, max.					0.5 A	
Status information/alarms/diagnostics						
Alarms						
• Diagnostic alarm	No	No	No	Yes; channel by channel	Yes; parameterizable	No
Diagnoses						
• Diagnostics	No	No	No	Yes	Yes; Parameters can be assigned	No
Isolation						
Isolation checked with	500 V DC	500 V DC	500 V DC	500 V DC	1500 V AC	1500 V AC
Isolation						
Isolation, digital outputs						
• between the channels, in groups of	8	8	8	8	1	4
• between the channels and the backplane bus	Yes; Optocoupler	Yes; Optocoupler	Yes; Optocoupler	Yes; Optocoupler	Yes; Optocoupler	Yes; Optocoupler
Dimensions and weight						
Width	40 mm	40 mm	40 mm	40 mm	40 mm	40 mm
Height	125 mm	125 mm	125 mm	125 mm	125 mm	125 mm
Depth	120 mm	120 mm	120 mm	120 mm	120 mm	120 mm
Weights						
Weight, approx.	190 g	200 g	260 g	210 g	260 g	250 g

	6ES7 322-1BF01-0AA0	6ES7 322-1FF01-0AA0	6ES7 322-5FF00-0AB0	6ES7 322-1FH00-0AA0	6ES7 322-1FL00-0AA0	6ES7 322-1HF01-0AA0
Voltages and currents						
Load voltage L+						
• Rated value (DC)	24 V					24 V
Load voltage L1						
• Rated value (AC)		230 V; 120/230 V AC	230 V; 120/230 V AC	230 V; 120/230 V AC	230 V; 120/230 V AC	

SIMATIC S7-300

Digital modules

SM 322 digital output modules

Technical specifications (continued)

	6ES7 322-1BF01-0AA0	6ES7 322-1FF01-0AA0	6ES7 322-5FF00-0AB0	6ES7 322-1FH00-0AA0	6ES7 322-1FL00-0AA0	6ES7 322-1HF01-0AA0
Current consumption						
from load voltage L+ (without load), max.	60 mA			2 mA		110 mA; Current consumption of relay
from load voltage L1 (without load), max.		2 mA	2 mA	3 mA	10 mA	110 mA
from backplane bus DC 5 V, max.	40 mA	100 mA	100 mA	200 mA	190 mA	40 mA
Power loss, typ.	6.8 W	8.6 W	8.6 W	8.6 W	25 W	3.2 W
Connection point						
required front connectors	20-pin	20-pin	40-pin	20-pin	20-pin	20-pin
Digital outputs						
Number of digital outputs	8	8	8	16	32	8; Relay
Cable length, shielded, max.	1,000 m	1,000 m	1,000 m	1,000 m	1,000 m	1,000 m
Cable length unshielded, max.	600 m	600 m	600 m	600 m	600 m	600 m
Short-circuit protection of the output	Yes; electronic	Yes; Fuse, 8 A / 250 V; per group	Yes; to be provided externally; fuse 3,15 A / 250 V, quick response	Yes; Fuse 8A, 250 V; per group	No	
Limitation of inductive shutdown voltage to	L+ (-48 V)					
Lamp load, max.	10 W	50 W	50 W	50 W	50 W	50 W
Output voltage						
• for signal "1", min.	L+ (-0.8 V)	L1 (-1.5 V)	L1 (-8.5 V)	L+(-0.8 V)	L1 (-0.8 V)	
Output current						
• for signal "1" rated value	2 A	2 A	2 A	1 A	1 A	
• for signal "1" permissible range for 0 to 40 °C, min.	5 mA	10 mA	10 mA	10 mA	10 mA	
• for signal "1" permissible range for 0 to 40 °C, max.	2.4 A	2 A	2 A	1 A	1 A	
• for signal "1" permissible range for 40 to 60 °C, min.	5 mA	10 mA	10 mA	10 mA	10 mA	
• for signal "1" permissible range for 40 to 60 °C, max.	2.4 A	1 A	1 A	0.5 A	1 A	
• for signal "1" minimum load current	5 mA	10 mA	10 mA	10 mA	10 mA	5 mA
• for signal "1" permissible peak current, max.		20 A; max. 1 AC cycle	20 A; with 2 half waves	20 A; with 2 half waves	10 A; per group (for 2 AC cycles)	
• for signal "0" residual current, max.	0.5 mA	2 mA	2 mA	2 mA	2 mA	
Switching frequency						
• with resistive load, max.	100 Hz	10 Hz	10 Hz	10 Hz	10 Hz	2 Hz
• with inductive load, max.	0.5 Hz	0.5 Hz	0.5 Hz	0.5 Hz	0.5 Hz	0.5 Hz
• on lamp load, max.	10 Hz	1 Hz	1 Hz	1 Hz	1 Hz	2 Hz
• mechanical, max.						10 Hz
Aggregate current of the outputs (per group)						
• vertical installation - up to 40 °C, max.	4 A	2 A	4 A	2 A	4 A	

SIMATIC S7-300

Digital modules

SM 322 digital output modules

4

Technical specifications (continued)

	6ES7 322-1BF01-0AA0	6ES7 322-1FF01-0AA0	6ES7 322-5FF00-0AB0	6ES7 322-1FH00-0AA0	6ES7 322-1FL00-0AA0	6ES7 322-1HF01-0AA0
Aggregate current of the outputs (per group)						
• horizontal installation		4 A	8 A	4 A	4 A	
- up to 40 °C, max.						
- up to 60 °C, max.	4 A	2 A	4 A	2 A	3 A	
Relay outputs						
Rated input voltage of relay L+ (DC)						24 V; 110 mA
Number of operating cycles						300,000; 230 V AC: 100000, 120 V AC: 200000, 24 V DC: 300000 (at 2 A)
Switching capacity of the contacts						
• with inductive load, max.						2 A; 2 A (230 V AC), 2 A (24 V DC)
• with resistive load, max.						2 A
Status information/ alarms/diagnostics						
Alarms						
• Diagnostic alarm	No	No	Yes; parameterizable	No	No	No
Diagnoses						
• Diagnostics	No	Yes	Yes; Off / last value / substitute value	Yes	Yes	No
Isolation						
Isolation checked with	500 V DC	1500 V AC	1500 V AC	4000 V DC	4000 V DC	1500 V AC
Isolation						
Isolation, digital outputs						
• between the channels, in groups of	4	4	1	8	8	2
• between the channels and the backplane bus	Yes; Optocoupler	Yes; Optocoupler	Yes; Optocoupler	Yes; Optocoupler	Yes; Optocoupler	Yes; Optocoupler
Dimensions and weight						
Width	40 mm	40 mm	40 mm	40 mm	80 mm	40 mm
Height	125 mm	125 mm	125 mm	125 mm	125 mm	125 mm
Depth	120 mm	120 mm	120 mm	120 mm	117 mm	120 mm
Weights						
Weight, approx.	190 g	275 g	275 g	275 g	500 g	190 g
	6ES7 322-1HF10-0AA0		6ES7 322-5HF00-0AB0		6ES7 322-1HH01-0AA0	
Voltages and currents						
Load voltage L+						
• Rated value (DC)	120 V		24 V		120 V	
Load voltage L1						
• Rated value (AC)	230 V		230 V		230 V	
Current consumption						
from backplane bus DC 5 V, max.	40 mA		100 mA		100 mA	
Power loss, typ.	4.2 W		3.5 W		4.5 W	
Connection point						
required front connectors	40-pin		40-pin		20-pin	