Data sheet

6ES7322-1BF01-0AA0



SIMATIC S7-300, Digital output SM 322, isolated, 8 DO, 24 V DC, 2A, 1x 20-pole

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.	60 mA
from backplane bus 5 V DC, max.	40 mA
Power loss	
Power loss, typ.	6.8 W
Digital outputs	
Number of digital outputs	8
Short-circuit protection	Yes; Electronic
Response threshold, typ.	3 A
Limitation of inductive shutdown voltage to	L+ (-48 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
• on lamp load, max.	10 W
Load resistance range	
lower limit	12 Ω
• upper limit	4 kΩ
Output voltage	
• for signal "1", min.	L+ (-0.8 V)
Output current	
 for signal "1" rated value 	2 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. 	2.4 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. 	2.4 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.	4 A
vertical installation	
— up to 40 °C, max.	4 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; per channel
Potential separation	
Potential separation digital outputs	
 between the channels 	Yes
 between the channels, in groups of 	4
 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
last modified:	8/16/2023 🖸

Data sheet

6ES7322-1BH01-0AA0



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 κΩ
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. with inductive load (acc. to IEC 60947-5-1, DC13), max. on lamp load, max. 10 Hz Total current of the outputs (per group) horizontal installation — up to 40 °C, max. — up to 60 °C, max. Yertical installation — up to 40 °C, max. 2 A Cable length 	
• 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	
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	
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	
vertical installation — up to 40 °C, max. 2 A	
— 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	
Weights Weight.approx.	
Weights Weight, approx. 190 g last modified: 8/16/2023 C	

Data sheet

6ES7322-1BH10-0AA0



SIMATIC S7-300, Digital output SM 322 High Speed, isolated, 16 DO, 24 V DC, 0.5A, 1x 20-pole

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.	110 mA
from backplane bus 5 V DC, max.	70 mA
Power loss	
Power loss, typ.	5 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.	200 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.	1 000 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; per channel
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.	200 g
last modified:	8/16/2023 🖸

Data sheet

6ES7322-1BL00-0AA0



SIMATIC S7-300, Digital output SM 322, isolated, 32 DO, 24 V DC, 0.5A, 1x 40-pole, Total current 4 A/group (16 A/module)

and the second sec	
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.	160 mA
from backplane bus 5 V DC, max.	110 mA
Power loss	
Power loss, typ.	6.6 W
Digital outputs	
Number of digital outputs	32
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; 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.	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	
Diagnostic information readable	No
Wire-break	No
Short-circuit	No
 missing load voltage 	No
Diagnostics indication LED	
 Rated load voltage PWR (green) 	No
• Fuse OK FSG (green)	No
Group error SF (red)	No
 Status indicator digital output (green) 	Yes; per channel
 Channel fault indicator F (red) 	No
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	40-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	260 g
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Data sheet

6ES7322-1BP00-0AA0

	SIMATIC S7-300 digital output SM 322, Isolated in groups of 16, 64DO, 24 V DC, 0.3A sink output Total current 2 A/group, 8 A/module Terminal blocks 6ES7392-1.N00-0AA0 and cable 6ES7392-40-0AA0 required
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.	75 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
	6 W
Power loss, typ.	6 W
Digital outputs	
Number of digital outputs	64
Short-circuit protection	Yes; Electronic
Response threshold, typ.	0.7 to 1.9 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	80 Ω
• upper limit	10 kΩ
Output voltage	
● for signal "1", min.	L+ (-0.5 V)
Output current	
 for signal "1" rated value 	0.3 A
 for signal "1" permissible range, min. 	2.4 mA
 for signal "1" permissible range, max. 	0.36 A
 for signal "0" residual current, max. 	0.1 mA
Output delay with resistive load	
• "0" to "1", max.	550 µs
• "1" to "0", max.	550 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
	10 Hz
on lamp load, max. Total surrout of the surrouts (nor group)	10112
Total current of the outputs (per group)	
horizontal installation	16 4
— up to 40 °C, max.	1.6 A
— up to 60 °C, max.	1.2 A
vertical installation	
— up to 40 °C, max.	1.6 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	
Diagnostic information readable	No
Wire-break	No
Short-circuit	No
Fuse blown	No
 missing load voltage 	No
Potential separation	
Potential separation digital outputs	
between the channels	No
 between the channels, in groups of 	16
 between the channels and backplane bus 	Yes; Optocoupler
Isolation	
Isolation tested with	500 V DC
connection method	
required front connector	Cable: 6ES7392-4Bxx0-0AA0 terminal blocks: 6ES7392-1xN00-0AA0
Dimensions	
Width	40 mm
Height	125 mm
Depth	112 mm
Weights	
Weight, approx.	230 g

Data sheet

6ES7322-1BP50-0AA0

	SIMATIC S7-300 digital output SM 322, Isolated in groups of 16, 64DO, 24 V DC, 0.3A sinking output Total current 2 A/group, 8 A/module Terminal blocks 6ES7392-1.N00-0AA0 and cable 6ES7392-40-0AA0 required
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	20.0 V
from load voltage L+ (without load), max.	75 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	6 W
Digital outputs	0 10
Number of digital outputs	64
Short-circuit protection	Yes; Electronic
Limitation of inductive shutdown voltage to	M+ (45 V)
Controlling a digital input	Yes
Switching capacity of the outputs	165
• on lamp load, max.	5 W
Load resistance range	5 W
lower limit	80 Ω
• upper limit	10 κΩ
Output voltage	10 K12
• for signal "1", min.	M+ (0.5 V)
Output current	Wi (0.5 V)
for signal "1" rated value	0.3 A
 for signal "1" permissible range, min. 	2.4 mA
 for signal "1" permissible range, max. 	0.36 A
Output delay with resistive load	0.00 A
• "0" to "1", max.	450 μs
• "1" to "0", max.	450 µs
Parallel switching of two outputs	430 µs
for uprating	No
 for redundant control of a load 	Yes
Switching frequency	
with resistive load, max.	100 Hz
with resistive load, max. with inductive load, max.	0.5 Hz
	10 Hz
on lamp load, max. Total current of the outputs (per group)	10 112
horizontal installation	
	160
— up to 40 °C, max.	1.6 A
— up to 60 °C, max.	1.2 A
vertical installation	160
— up to 40 °C, max.	1.6 A
Cable length	1 000 m
 shielded, max. unchielded max. 	1 000 m
unshielded, max. Intermute/diagnostics/status_information	600 m
Interrupts/diagnostics/status information	N
Alarms	No
Diagnostics function	No
Alarms	Na
Diagnostic alarm	No

Diagnoses	
Diagnostic information readable	No
• 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
Group error SF (red)	No
 Status indicator digital output (green) 	Yes
 Channel fault indicator F (red) 	No
Potential separation	
Potential separation digital outputs	
 between the channels 	No
 between the channels, in groups of 	16
 between the channels and backplane bus 	Yes; Optocoupler
Isolation	
Isolation tested with	500 V DC
connection method	
required front connector	Cable: 6ES7392-4Bxx0-0AA0 terminal blocks: 6ES7392-1xN00-0AA0
Dimensions	
Width	40 mm
Height	125 mm
Depth	112 mm
Weights	
Weight, approx.	230 g
last modified:	8/16/2023 🖸

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Data sheet

6ES7322-1CF00-0AA0



SIMATIC S7-300, Digital output SM 322, isolated, 8 DO, 48-125 V DC, 1.5A, 1x 20-pole

Supply voltage	
Load voltage L+	
Rated value (DC)	48 V; 48 V DC to 125 V DC
 permissible range, lower limit (DC) 	40 V
 permissible range, upper limit (DC) 	140 V
 Reverse polarity protection 	Yes; through fuse
Input current	
from load voltage L+ (without load), max.	2 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	7.2 W
Digital outputs	
Number of digital outputs	8
Short-circuit protection	Yes; Electronic
Response threshold, typ.	4.4 A
Limitation of inductive shutdown voltage to	M (-1 V)
Controlling a digital input	Yes
Spare fuses	6.3 A / 250 V, quick-response, 5x 20 mm
Switching capacity of the outputs	
 on lamp load, max. 	15 W; 15 W (48 V) or 40 W (125 V)
Output voltage	
• for signal "1", min.	L+ (-1.2 V)
Output current	
• for signal "1" rated value	1.5 A
 for signal "1" permissible range for 0 to 40 °C, min. 	10 mA
 for signal "1" permissible range for 0 to 40 °C, max. 	1.5 A
 for signal "1" permissible range for 40 to 60 °C, min. 	10 mA
 for signal "1" permissible range for 40 to 60 °C, max. 	1.5 A
 for signal "1" minimum load current 	10 mA
 for signal "1" permissible surge current, max. 	3 A; for 10 ms
 for signal "0" residual current, max. 	0.5 mA
Output delay with resistive load	
• "0" to "1", max.	2 ms
• "1" to "0", max.	15 ms
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. 	25 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.	6 A
— up to 50 °C, max.	4 A
— up to 60 °C, max.	3 A
vertical installation	
— up to 40 °C, max.	4 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
Group error SF (red)	Yes
 Status indicator digital output (green) 	Yes
Potential separation	
Potential separation digital outputs	
between the channels	Yes
 between the channels, in groups of 	4
 between the channels and backplane bus 	Yes; Optocoupler
Isolation	
Isolation tested with	1 500 V AC
connection method	
required front connector	20-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	250 g
last modified:	8/16/2023

Data sheet

6ES7322-1FF01-0AA0



SIMATIC S7-300, Digital output SM 322, isolated, 8 DO, 120/230 V AC, 1 A, 1x 20-pole

Supply voltage	
Load voltage L1	
Rated value (AC)	230 V; 120/230 V AC
 permissible range, lower limit (AC) 	93 V
• permissible range, upper limit (AC)	264 V
 permissible frequency range, lower limit 	47 Hz
 permissible frequency range, upper limit 	63 Hz
Input current	
from load voltage L1 (without load), max.	2 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	8.6 W
Digital outputs	
Number of digital outputs	8
Short-circuit protection	Yes; Fuse 8 A, 250 V; per group
 required current for fuse shutdown, min. 	40 A
Response time, max.	300 ms
Controlling a digital input	Yes
Size of motor starters according to NEMA, max.	5 NEMA compliant
Spare fuses	8 A / quick response
Zero-crossing switch	Yes; Max. 60 V
Switching capacity of the outputs	
 on lamp load, max. 	50 W
Output voltage	
 for signal "1", min. 	L1 (-1.5 V)
 for signal "1" (at max. current), min. 	L1 (-1.5 V)
 for signal "1" (at min. current), min. 	L1 (-8.5 V)
Output current	
 for signal "1" rated value 	2 A
 for signal "1" permissible range for 0 to 40 °C, min. 	10 mA
 for signal "1" permissible range for 0 to 40 °C, max. 	2 A
 for signal "1" permissible range for 40 to 60 °C, min. 	10 mA
 for signal "1" permissible range for 40 to 60 °C, max. 	1 A
 for signal "1" minimum load current 	10 mA
 for signal "1" permissible surge current, max. 	20 A; max. 1 AC cycle
 for signal "0" residual current, max. 	2 mA
Output delay with resistive load	
• "0" to "1", max.	1 AC cycle
• "1" to "0", max.	1 AC cycle

Parallel switching of two outputs	
 for uprating 	No
 for redundant control of a load 	Yes
Switching frequency	
 with resistive load, max. 	10 Hz
 with inductive load, max. 	0.5 Hz
 with inductive load (acc. to IEC 60947-5-1, AC15), max. 	0.5 Hz
 on lamp load, max. 	1 Hz
Total current of the outputs (per group)	
horizontal installation	
— up to 40 °C, max.	4 A
— up to 60 °C, max.	2 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	Yes; Fuse blown or load voltage missing
Alarms	
Diagnostic alarm	No
Diagnoses	
Wire-break	No
Short-circuit	No
Fuse blown	Yes
missing load voltage	Yes
Diagnostics indication LED	
Rated load voltage PWR (green)	Yes
• Fuse OK FSG (green)	Yes
Group error SF (red)	Yes
Status indicator digital output (green)	Yes
Potential separation	
Potential separation digital outputs	
between the channels	Yes
 between the channels, in groups of 	4
 between the channels and backplane bus 	Yes; Optocoupler
Isolation	
Isolation tested with	1 500 V AC
connection method	
required front connector	20-pin
Dimensions	10
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	275 g

Data sheet

6ES7322-1FH00-0AA0



SIMATIC S7-300, Digital output SM 322, Isolated 16 DO, 120/230 V AC, 1 A, 1x 20-pole

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Supply voltage	
Load voltage L1	
Rated value (AC)	230 V; 120/230 V AC
 permissible range, lower limit (AC) 	79 V
• permissible range, upper limit (AC)	264 V
Input current	
from load voltage L1 (without load), max.	2 mA
from backplane bus 5 V DC, max.	200 mA
Power loss	
Power loss, typ.	8.6 W
Digital outputs	
Number of digital outputs	16
Short-circuit protection	Yes; Fuse 8 A, 250 V; per group
 required current for fuse shutdown, min. 	40 A
Response time, max.	300 ms
Controlling a digital input	Yes
Size of motor starters according to NEMA, max.	4 NEMA compliant
Spare fuses	8 A / quick response
Switching capacity of the outputs	
 on lamp load, max. 	50 W
Output voltage	
 for signal "1" (at max. current), min. 	L1 (-1.5 V)
 for signal "1" (at min. current), min. 	L1 (-8.5 V)
Output current	
 for signal "1" rated value 	1 A
 for signal "1" permissible range for 0 to 40 °C, min. 	10 mA
 for signal "1" permissible range for 0 to 40 °C, max. 	1 A
 for signal "1" permissible range for 40 to 60 °C, min. 	10 mA
 for signal "1" permissible range for 40 to 60 °C, max. 	0.5 A
 for signal "1" minimum load current 	10 mA
 for signal "1" permissible surge current, max. 	20 A; with 2 half waves
 for signal "0" residual current, max. 	2 mA
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. 	10 Hz
 with inductive load, max. 	0.5 Hz
• with inductive load (acc. to IEC 60947-5-1, AC15), max.	0.5 Hz

 on lamp load, max. 	1 Hz
Total current of the outputs (per group)	
horizontal installation	
— up to 40 °C, max.	4 A
— up to 60 °C, max.	2 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	
Diagnostics function	Yes; Fuse blown or load voltage missing
Alarms	
Diagnostic alarm	No
Diagnoses	
Wire-break	No
Short-circuit	No
Fuse blown	Yes
 missing load voltage 	No
Diagnostics indication LED	
 Rated load voltage PWR (green) 	No
 Fuse OK FSG (green) 	Yes; Red LED for fuse
Group error SF (red)	Yes
 Status indicator digital output (green) 	Yes
Potential separation	
Potential separation digital outputs	
 between the channels, in groups of 	8
 between the channels and backplane bus 	Yes; Optocoupler
Isolation	
Isolation tested with	4 000 V DC
connection method	
required front connector	20-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	275 g
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last modified:	8/16/2023 🖸

Data sheet

6ES7322-1FL00-0AA0



SIMATIC S7-300, Digital output SM 322, isolated, 32 DO, 120 V/230 V AC, 1 A, double-width, 2x 20-pole

Supply voltage	
Load voltage L1	
Rated value (AC)	120 V; 120/230 V AC
• permissible range, lower limit (AC)	79 V
permissible range, upper limit (AC)	264 V
permissible frequency range, lower limit	47 Hz
permissible frequency range, upper limit	63 Hz
Input current	
from load voltage L1 (without load), max.	10 mA
from backplane bus 5 V DC, max.	190 mA
Power loss	
Power loss, typ.	25 W
Digital outputs	
Number of digital outputs	32
Short-circuit protection	No
Controlling a digital input	Yes
Size of motor starters according to NEMA, max.	Size 4 according to NEMA
Zero-crossing switch	Yes; Max. 60 V
Switching capacity of the outputs	
 on lamp load, max. 	50 W
Output voltage	
● for signal "1", min.	L1 (-0.8 V)
Output current	
 for signal "1" rated value 	1 A
 for signal "1" permissible range for 0 to 40 °C, min. 	10 mA
 for signal "1" permissible range for 0 to 40 °C, max. 	1 A
 for signal "1" permissible range for 40 to 60 °C, min. 	10 mA
 for signal "1" permissible range for 40 to 60 °C, max. 	1 A
 for signal "1" minimum load current 	10 mA
 for signal "1" permissible surge current, max. 	10 A; per group (for 2 AC cycles)
 for signal "0" residual current, max. 	2 mA
Output delay with resistive load	
• "0" to "1", max.	1 AC cycle
• "1" to "0", max.	1 AC cycle
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.	10 Hz

 with inductive load, max. 	0.5 Hz
 with inductive load (acc. to IEC 60947-5-1, AC15), max. 	0.5 Hz
 on lamp load, max. 	1 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.	4 A
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Interrupts/diagnostics/status information	
Alarms	No
Diagnostics function	Yes; Fuse blown or load voltage missing
Alarms	
Diagnostic alarm	No
Diagnostics indication LED	
Group error SF (red)	Yes
 Status indicator digital output (green) 	Yes; per channel
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	4 000 V DC
connection method	
required front connector	20-pin
Dimensions	
Width	80 mm
Height	125 mm
Depth	117 mm
Weights	
Weight, approx.	500 g
last modified:	8/16/2023

Data sheet

6ES7322-1HF01-0AA0



SIMATIC S7-300, Digital output SM 322, isolated, 8 DO (relay), 1x 20-pole, 24 V DC, 2 A or 230 V AC, 2A

Figur	esim	ilar
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Supply voltage	
Load voltage L+	
Rated value (DC)	24 V
Input current	
from supply voltage L+, max.	160 mA
from backplane bus 5 V DC, max.	40 mA
Power loss	
Power loss, typ.	3.2 W
Digital outputs	
Number of digital outputs	8; Relays
Short-circuit protection	No
Controlling a digital input	Yes
Switching capacity of the outputs	
 on lamp load, max. 	50 W
 Low energy/fluorescent lamps with electronic control gear 	10x 58 W
 Fluorescent tubes, conventionally compensated 	1x 58 W
 Fluorescent tubes, uncompensated 	10x 58 W
Output current	
 for signal "1" rated value 	2 A
 for signal "1" minimum load current 	5 mA
Parallel switching of two outputs	
 for uprating 	No
 for redundant control of a load 	Yes
Switching frequency	
 with resistive load, max. 	2 Hz
 with inductive load, max. 	0.5 Hz
 With inductive load (to IEC 60947-5-1, DC13/AC15), max. 	0.5 Hz
 on lamp load, max. 	2 Hz
• mechanical, max.	10 Hz
Relay outputs	
 Rated supply voltage of relay coil L+ (DC) 	24 V; 110 mA
 Contact connection (internal) 	Yes; SIOV-CU4032 K275G
 Number of operating cycles, max. 	300 000; 230 V AC: 100 000; 120 V AC: 200 000; 24 V DC: 300 000 (at 2 A)
Switching capacity of contacts	
- with inductive load, max.	2 A; 2 A (230 V AC), 2 A (24 V DC)
— with resistive load, max.	2 A
— Thermal continuous current, max.	3 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 	2
 between the channels and backplane bus 	Yes; Optocoupler
Isolation	
Isolation tested with	1 500 V AC
connection method	
required front connector	20-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	190 g
last modified:	8/16/2023 🖸

Data sheet

6ES7322-1HF10-0AA0



SIMATIC S7-300, Digital output SM 322, isolated, 8 DO (relay), 1x 40-pole, 24 V DC, 5 A or 230 V AC, 5 A, connectors with spring-loaded terminal can be used as of 6ES7392-1BM01-0AA0

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Supply voltage	
Load voltage L+	
Rated value (DC)	120 V
Load voltage L1	
Rated value (AC)	230 V
Input current	
from supply voltage L+, max.	125 mA
from backplane bus 5 V DC, max.	40 mA
Power loss	
Power loss, typ.	3.2 W
Digital outputs	
Number of digital outputs	8; Relays
Short-circuit protection	No; to be provided externally
Controlling a digital input	Yes
Switching capacity of the outputs	
 on lamp load, max. 	1 500 W; 230 V AC
 Low energy/fluorescent lamps with electronic control gear 	10x 58 W
 Fluorescent tubes, conventionally compensated 	1x 58 W
 Fluorescent tubes, uncompensated 	10x 58 W
Output current	
 for signal "1" rated value 	5 A
 for signal "1" minimum load current 	5 mA
Parallel switching of two outputs	
 for uprating 	No
 for redundant control of a load 	Yes
Switching frequency	
 with resistive load, max. 	2 Hz
• with inductive load, max.	0.5 Hz
• With inductive load (to IEC 60947-5-1, DC13/AC15), max.	0.5 Hz
 on lamp load, max. 	2 Hz
 mechanical, max. 	10 Hz
Total current of the outputs (per group)	
horizontal installation	
— up to 60 °C, max.	5 A
vertical installation	
— up to 40 °C, max.	5 A
Relay outputs	
 Rated supply voltage of relay coil L+ (DC) 	24 V
 Contact connection (internal) 	No

• Number of operating cycles, max. 300 000; 300 000; 24 V DC, at 2 A;; 200 000 (120 V AC, at 3 A; 100 000 (230 V AC, at 3 A) Switching capacity of contacts		
with inductive load, max. 3 A; 3 A (230 V DC), 2 A (24 V AC) with resistive load, max. 8 A; 8 A (230 V DC), 5 A (24 V AC) Thermal continuous current, max. 8 A Cable length	Number of operating cycles, max.	
with resistive load, max. 8 Å; 8 Å (230 V DC), 5 Å (24 V AC) Thermal continuous current, max. 8 Å Cable length	Switching capacity of contacts	
Thermal continuous current, max. 8 A Cable length 1000 m unshielded, max. 600 m Immerystridlagnostics/status information Alarms No Diagnostics function No Alarms No Olignostic sfunction No Alarms No Olignostic alarm No Olignostic alarm No Short-circuit No • Wire-break No • Short-circuit No • Short-circuit No • Fuse blown No • Fuse blown No • Fuse blown No • Fuse blown No • Ediation LED No • Fuse blown No • Status indicator digital output (green) Yes Potential separation digital output (green) Yes • between the channels, in groups of 1 •	— with inductive load, max.	3 A; 3 A (230 V DC), 2 A (24 V AC)
Cable length • shielded, max. 600 m Interruptic/dignostics/status information Alarms No Diagnostics function No Alarms No Obignostic alarm No Biagnostics function No Alarms No Obignostic alarm No Diagnostic alarm No Status No Status No Status No Status No Status No Status indicaton LED No • Fuse OK FSG (green) No • Status indicator digital output (green) No • Status indicator digital outputs Ves • Detential separation Yes Potential separation 1 • between the channels in groups of 1 • between the channels and backplane bus Yes; Optocoupler Isolation tested with 2000 V AC connection method required front connector Image: Status indicator connector 40-pin Dimensions Vidth	— with resistive load, max.	8 A; 8 A (230 V DC), 5 A (24 V AC)
• shielded, max. 1 000 m • unshielded, max. 600 m Interrupts/diagnostics/status information No Alarms No • Diagnostics function No Alarms No • Diagnostic alarm No Diagnostics function No Alarms No • Wire-break No • Short-circuit No • Short-circuit No • missing load voltage No Diagnostics indication LED No • Rated load voltage PWR (green) No • Statis indicator digital output (green) Yes Potential separation No Potential separation Yes Potential separation 1 • between the channels, in groups of 1 • between the channels and backplane bus Yes; Optocoupler Isolation 2 Isolation tested with 2 000 V AC connector method 40-pin Pinensions 1 Width 40 mm Height 125 mm Depth 120 mm	— Thermal continuous current, max.	8 A
• unshielded, max.600 mInterrupts/diagnostics/status informationAlarmsNoDiagnostics functionNoAlarmsNo• Diagnostic alarmNoDiagnostic alarmNoBiagnostic alarmNoOutro Diagnostic alarmNo• Wire-breakNo• Short-circuitNo• Fuse blownNo• missing load voltageNo• Biagnostics indicaton LED• Rated load voltage PWR (green)No• Status indicator digital outputs• Status indicator digital outputs• between the channelsYes• Detential separationYesIsolaton2 000 V ACconnection method	Cable length	
Interrupts/diagnostics/status information Alarms No Diagnostic function No Alarms No • Diagnostic alarm No • Diagnoses No • Wire-break No • Short-circuit No • Fuse blown No • missing load voltage No • Tisse off FSG (green) No • Fuse of KFSG (green) No • Status indicator digital output (green) Yes Potential separation digital outputs • • between the channels Yes • between the channels in groups of 1 • between the channels in groups of 1 • between the channels and backplane bus Yes; Optocoupler Isolation Isolation Isolation Isolation Width 40 mm Height 125 mn Depth 120 mm Weight. approx. 320 g	 shielded, max. 	1 000 m
Alarms No Diagnostics function No Alarms No Oligopostic atarm No Diagnoses No • Wire-break No • Short-circuit No • Fuse blown No • missing load voltage No Diagnostics indication LED No • Rated load voltage PWR (green) No • Fuse OK FSG (green) No • Status indicator digital output (green) Yes Potential separation Potential separation Potential separation Yes Potential separation Yes • between the channels in groups of 1 • between the channels in groups of 1 • between the channels and backplane bus Yes; Optocoupler Isolation tested with 2 000 V AC connection method 40-pin Pointenisions 125 mm Width 40 mm Height 125 mm Depth 120 mm	 unshielded, max. 	600 m
Diagnostics function No Alarms - Diagnostic alarm No Diagnoses Wire-break No Short-circuit No Fuse blown No missing load voltage No Patential separation IED Fuse OK FSG (green) No Fuse OK FSG (green) No Status indicator LED Potential separation digital output (green) Yes Potential separation digital output (green) between the channels Yes between the channels Yes OK FSG (green) Solation Solation tested with 2 000 V AC connector method required front connector 40-pin Dimensions Width 40 mm Height 125 mm Depth 120 mm Weight, aprox. 320 g Item Status Item Status	Interrupts/diagnostics/status information	
Alarms No Diagnossic alarm No Diagnossic No Wire-break No Short-circuit No Fuse blown No emissing load voltage No Diagnostics indication LED No emissing load voltage PWR (green) No emissing load voltage full (green) Yes Potential separation Yes Potential separation Yes Potential separation digital outputs 1 e between the channels Yes; Optocoupler Isolation tested with 2 000 V AC connection method 1 required front connector 40-pin Dimensions Width 40 mm Height 125 mm Depth 120 mm Weight, approx. 320 g	Alarms	No
• DiagnosesWire-breakNo• Short-circuitNo• Fuse blownNo• missing load voltageNoDiagnostics indication LEDNo• Rated load voltage PWR (green)No• Rated load voltage put (green)No• Status indicator digital output (green)YesPotential separationYesPotential separation digital outputsYes• between the channelsYes; OptocouplerIsolation LetonYes; OptocouplerIsolation tested with2 000 V ACconnection method40-pinVidth40 mmHeight125 mmDepth120 mmWeightsYesWeight, approx.320 g	Diagnostics function	No
Diagnoses • Wire-break No • Short-circuit No • Fuse blown No • missing load voltage No Diagnostics indication LED No • Rated load voltage PWR (green) No • Status indicator digital output (green) Yes Potential separation Yes Potential separation digital outputs Isolation tested with • between the channels, in groups of 1 • between the channels and backplane bus Yes; Optocoupler Isolation tested with 2 000 V AC connection method Isolation required front connector 40-pin Vidth 40 mm Height 125 mm Depth 120 mm Weights 320 g	Alarms	
• Wire-breakNo• Short-circuitNo• Fuse blownNo• Tuse blownNo• missing load voltageNoDiagnostics indication LED• Rated load voltage PWR (green)No• Fuse OK FSG (green)No• Status indicator digital output (green)YesPotential separationPotential separation digital outputs• between the channels in groups of1• between the channels and backplane busYes; OptocouplerIsolationIsolation tested with2 000 V ACconnection method40-pinPoinnesionsWidth40 mmHeight125 mmDepth120 mmWeightsWeight, approx.320 g	Diagnostic alarm	No
• Short-circuitNo• Fuse blownNo• missing load voltageNoDiagnostics indication LED• Rated load voltage PWR (green)No• Fuse OK FSG (green)No• Status indicator digital output (green)YesPotential separation digital output (green)YesPotential separation digital outputs• between the channelsYes• between the channels, in groups of1• between the channels, in groups of1• between the channels and backplane busYes; OptocouplerIsolation tested with2 000 V ACconnector40-pinMidth40 mmHeight125 mmDepth120 mmWeights120 mmWeight, approx.320 g	Diagnoses	
• Fuse blownNo• missing load voltageNoDiagnostics indication LED• Rated load voltage PWR (green)No• Fuse OK FSG (green)No• Status indicator digital output (green)YesPotential separationPotential separation digital outputs• between the channels, in groups of1• between the channels, and backplane busYes; OptocouplerIsolationIsolation tested with2 000 V ACconnection methodImaginal functionVidth40 mmHeight125 mmDepth120 mmWeight, approx.320 g	Wire-break	No
• missing load voltageNoDiagnostics indication LED•• Rated load voltage PWR (green)No• Fuse OK FSG (green)No• Status indicator digital output (green)YesPotential separationPotential separation digital outputs• between the channelsYes• between the channels in groups of1• between the channels and backplane busYes; OptoccouplerIsolationIsolation tested with2 000 V ACconnection methodPrequired front connector40-pinDimensionsWidth40 mmHeight125 mmDepth120 mmWeights320 g	Short-circuit	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 1 • between the channels and backplane bus Yes; Optocoupler Isolation Isolation Isolation Isolation tested with 2 000 V AC connection method required front connector 40-pin 1 Dimensions Width 40 mm Height 125 mm Depth 120 mm Weights 320 g	Fuse blown	No
• Rated load voltage PWR (green)No• Fuse OK FSG (green)No• Status indicator digital output (green)YesPotential separationYesPotential separation digital outputs1• between the channelsYes• between the channels, in groups of1• between the channels and backplane busYes; OptocouplerIsolationYes; OptocouplerIsolation tested with2 000 V ACconnection methodrequired front connector40-pinDimensions125 mmWidth40 mmHeight125 mmDepth120 mmWeight, approx.320 g	 missing load voltage 	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 1 • between the channels and backplane bus Yes; Optocoupler Isolation Isolation tested with 2 000 V AC connection method required front connector 40-pin Dimensions 125 mm Width 120 mm Weights 320 g	Diagnostics indication LED	
• Status indicator digital output (green) Yes Potential separation Potential separation digital outputs • between the channels Yes • between the channels, in groups of 1 • between the channels and backplane bus Yes; Optocoupler Isolation 2 000 V AC connection method 2 000 V AC required front connector 40-pin Dimensions 125 mm Width 120 mm Weights 320 g	 Rated load voltage PWR (green) 	No
Potential separation Potential separation digital outputs • between the channels Yes • between the channels, in groups of 1 • between the channels and backplane bus Yes; Optocoupler Isolation 2 000 V AC connection method 40-pin required front connector 40-pin Dimensions 125 mm Width 40 mm Height 120 mm Weights 320 g	 Fuse OK FSG (green) 	No
Potential separation digital outputs • between the channels Yes • between the channels, in groups of 1 • between the channels and backplane bus Yes; Optocoupler Isolation 2 000 V AC connection method 2 000 V AC required front connector 40-pin Dimensions 40 mm Width 40 mm Height 125 mm Depth 120 mm Weights 320 g	 Status indicator digital output (green) 	Yes
• between the channelsYes• between the channels, in groups of1• between the channels and backplane busYes; OptocouplerIsolationIsolation tested with2 000 V ACconnection methodrequired front connector40-pinDimensionsWidth40 mmHeight125 mmDepth120 mmWeightsWeight, approx.320 g	Potential separation	
• between the channels, in groups of • between the channels and backplane bus1IsolationYes; OptocouplerIsolation tested with2 000 V ACconnection method40-pinrequired front connector40-pinDimensions125 mmWidth125 mmDepth120 mmWeights320 g	Potential separation digital outputs	
• between the channels and backplane busYes; OptocouplerIsolationIsolation tested with2 000 V ACconnection methodrequired front connector40-pinDimensionsWidth40 mmHeight125 mmDepth120 mmWeightsWeight, approx.320 g	 between the channels 	Yes
Isolation Isolation tested with 2 000 V AC connection method 40-pin required front connector 40-pin Dimensions 40 mm Width 40 mm Height 125 mm Depth 120 mm Weights 320 g	 between the channels, in groups of 	1
Isolation tested with2 000 V ACconnection methodrequired front connector40-pinDimensionsWidth40 mmHeight125 mmDepth120 mmWeightsWeight, approx.320 g	 between the channels and backplane bus 	Yes; Optocoupler
connection methodrequired front connector40-pinDimensions40 mmWidth40 mmHeight125 mmDepth120 mmWeightsWeight, approx.320 g	Isolation	
required front connector 40-pin Dimensions 40 mm Width 40 mm Height 125 mm Depth 120 mm Weights 320 g	Isolation tested with	2 000 V AC
Dimensions Width 40 mm Height 125 mm Depth 120 mm Weights Weight, approx. 320 g	connection method	
Width40 mmHeight125 mmDepth120 mmWeights320 g	required front connector	40-pin
Height 125 mm Depth 120 mm Weights 320 g	Dimensions	
Depth 120 mm Weights 320 g	Width	40 mm
Weights Weight, approx. 320 g	Height	125 mm
Weight, approx. 320 g	Depth	120 mm
	Weights	
last modified: 8/16/2023 C	Weight, approx.	320 g
last modified: 8/16/2023		
	last modified:	8/16/2023 🖸

Data sheet

6ES7322-1HH01-0AA0



SIMATIC S7-300, Digital output SM 322, Isolated 16 DO, relay contacts, 1x 20-pole

0	
Supply voltage	
Load voltage L+	
Rated value (DC)	120 V
Load voltage L1	
Rated value (AC)	230 V
Input current	
from supply voltage L+, max.	250 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	4.5 W
Digital outputs	
Number of digital outputs	16; Relays
Short-circuit protection	No
Controlling a digital input	Yes
Size of motor starters according to NEMA, max.	Size 5 according to NEMA
Switching capacity of the outputs	
● on lamp load, max.	50 W; 230 V AC
Output current	
 for signal "1" rated value 	2 A
 for signal "1" minimum load current 	10 mA
Parallel switching of two outputs	
• for uprating	No
 for redundant control of a load 	Yes
Switching frequency	
• with resistive load, max.	1 Hz
• with inductive load, max.	0.5 Hz
• With inductive load (to IEC 60947-5-1, DC13/AC15), max.	0.5 Hz
 on lamp load, max. 	1 Hz
mechanical, max.	10 Hz
Total current of the outputs (per group)	
horizontal installation	
— up to 60 °C, max.	8 A
vertical installation	
— up to 40 °C, max.	8 A
Relay outputs	
 Rated supply voltage of relay coil L+ (DC) 	24 V
Contact connection (internal)	No
Number of operating cycles, max.	100 000; 50 000 (24 V DC, at 2 A); 700 000 (120 V AC, at 2 A); 100 000 (230 V AC, at 2 A)

Switching capacity of contacts	
— with inductive load, max.	2 A; 2 A (230 V AC), 2 A (24 V DC)
— with resistive load, max.	2 A; 2 A (230 V AC), 2 A (24 V DC)
— Thermal continuous current, 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	1 500 V AC
connection method	
required front connector	20-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	250 g
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Data sheet

6ES7322-5FF00-0AB0



SIMATIC S7-300, Digital output SM 322, isolated, 8 DO, 120/230 V AC, 2A, with single rooting/channel and selectable failure mode, 1x 40-pole

Figuresi	milar
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Supply voltage	
Load voltage L1	
 Rated value (AC) 	230 V; 120/230 V AC
 permissible range, lower limit (AC) 	79 V
 permissible range, upper limit (AC) 	264 V
Input current	
from load voltage L1 (without load), max.	2 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	8.6 W
Digital outputs	
Number of digital outputs	8
Short-circuit protection	Yes; to be provided externally; fuse 3.15 A / 250 V, quick response
Controlling a digital input	Yes
Size of motor starters according to NEMA, max.	Size 5 according to NEMA
Zero-crossing switch	Yes; 60 V
Switching capacity of the outputs	
• on lamp load, max.	50 W
Output voltage	
• for signal "1", min.	L1 (-8.5 V)
Output current	
 for signal "1" rated value 	2 A
 for signal "1" permissible range for 0 to 40 °C, min. 	10 mA
 for signal "1" permissible range for 0 to 40 °C, max. 	2 A
 for signal "1" permissible range for 40 to 60 °C, min. 	10 mA
 for signal "1" permissible range for 40 to 60 °C, max. 	1 A
 for signal "1" minimum load current 	10 mA
 for signal "1" permissible surge current, max. 	20 A; with 2 half waves
 for signal "0" residual current, max. 	2 mA
Parallel switching of two outputs	
• for uprating	No
 for redundant control of a load 	Yes
Switching frequency	
 with resistive load, max. 	10 Hz
 with inductive load, max. 	0.5 Hz
• with inductive load (acc. to IEC 60947-5-1, AC15), max.	0.5 Hz
 on lamp load, max. 	1 Hz
Total current of the outputs (per group)	
horizontal installation	

— up to 40 °C, max.	8 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
Interrupts/diagnostics/status information	
Diagnostics function	Yes; Parameterizable
Alarms	
Diagnostic alarm	Yes; Parameterizable
Diagnostics indication LED	
Group error SF (red)	Yes
 Status indicator digital output (green) 	Yes
Potential separation	
Potential separation digital outputs	
 between the channels 	Yes
 between the channels, in groups of 	1
 between the channels and backplane bus 	Yes; Optocoupler
Isolation	
Isolation tested with	1 500 V AC
connection method	
required front connector	40-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	275 g
last modified:	8/16/2023 🖸

Data sheet

6ES7322-5GH00-0AB0



SIMATIC S7-300, Digital output SM 322, isolated, 16 DO (solid-state relay), 24-48 V AC/DC; 0.5 A with single rooting, 1x 40-pole

Supply voltage	
Mains buffering	
Mains/voltage failure stored energy time	5 ms
Load voltage L+	
Rated value (DC)	24 V; 24 / 48
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	57.6 V
Reverse polarity protection	Yes
Input current	
from supply voltage L+, max.	200 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	2.8 W
Digital outputs	
Number of digital outputs	16
Short-circuit protection	No; to be provided externally
Controlling a digital input	Yes
Size of motor starters according to NEMA, max.	Size 5 according to NEMA
Switching capacity of the outputs	
• on lamp load, max.	2.5 W
Output voltage	
• for signal "1", min.	L+ (-0.25 V)
Output current	
 for signal "1" rated value 	0.5 A
 for signal "1" permissible range for 0 to 40 °C, max. 	0.5 A
 for signal "1" permissible range for 40 to 60 °C, max. 	0.5 A
 for signal "1" permissible surge current, max. 	1.5 A; for 50 ms, 1 A 2 s one-time
 for signal "0" residual current, max. 	10 µA
Output delay with resistive load	
• "0" to "1", max.	6 ms
• "1" to "0", max.	3 ms
Parallel switching of two outputs	
 for uprating 	No
 for redundant control of a load 	Yes
Switching frequency	
 with resistive load, max. 	10 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. 	0.5 Hz

Total current of the outputs (per group)	
horizontal installation	
— up to 40 °C, max.	0.5 A; 8 A per module
— up to 60 °C, max.	0.5 A; 8 A per module
vertical installation	
— up to 40 °C, max.	0.5 A; 8 A per module
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes; Parameterizable
Alarms	
Diagnostic alarm	Yes; Parameterizable
Diagnoses	
Diagnostic information readable	Yes
Diagnostics indication LED	
Group error SF (red)	Yes
 Status indicator digital output (green) 	Yes
Potential separation	
Potential separation digital outputs	
 between the channels 	Yes
 between the channels, in groups of 	1
 between the channels and backplane bus 	Yes; Optocoupler
 between the channels and the power supply of the electronics 	Yes
Isolation	
Isolation tested with	1 500 V AC
connection method	
required front connector	40-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	260 g

Data sheet

6ES7322-5HF00-0AB0



SIMATIC S7-300, Digital output SM 322, isolated, 8 DO (relay), 1x 40-pole, 24 V DC, 120-230 V AC, 5 A with RC filter overvoltage protection

Supply voltage	
Load voltage L+	
Rated value (DC)	24 V
 permissible range, lower limit (DC) 	24 V
 permissible range, upper limit (DC) 	120 V
Load voltage L1	
Rated value (AC)	230 V
Input current	
from supply voltage L+, max.	160 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	3.5 W
Digital outputs	
Number of digital outputs	8; Relays
Short-circuit protection	No; to be provided externally
Controlling a digital input	Yes
Switching capacity of the outputs	
 on lamp load, max. 	1 500 W; 230 V AC
 Low energy/fluorescent lamps with electronic control gear 	10x 58 W
 Fluorescent tubes, conventionally compensated 	1x 58 W
 Fluorescent tubes, uncompensated 	10x 58 W
Output current	
 for signal "1" rated value 	5 A
 for signal "1" minimum load current 	10 mA
Parallel switching of two outputs	
 for uprating 	No
 for redundant control of a load 	Yes
Switching frequency	
 with resistive load, max. 	2 Hz
 with inductive load, max. 	0.5 Hz
• With inductive load (to IEC 60947-5-1, DC13/AC15), max.	0.5 Hz
 on lamp load, max. 	2 Hz
mechanical, max.	10 Hz
Total current of the outputs (per group)	
horizontal installation	
— up to 60 °C, max.	5 A
vertical installation	
— up to 40 °C, max.	5 A
Relay outputs	

 Contact connection (internal) 	Yes; 330 Ohm, 0.1uF
 Number of operating cycles, max. 	100 000; 100 000 (24 V DC, at 5 A), 100 000 (230 V AC, at 5 A)
Switching capacity of contacts	
— with inductive load, max.	5 A; 5 A (230 V DC), 5 A (24 V AC)
— with resistive load, max.	5 A; 5 A (230 V DC), 5 A (24 V AC)
— Thermal continuous current, max.	5 A
Cable length	
• shielded, max.	1 000 m
 unshielded, max. 	600 m
Interrupts/diagnostics/status information	
Alarms	Yes
Diagnostics function	Yes; Parameterizable
Alarms	
Diagnostic alarm	Yes; Parameterizable
Diagnoses	
Diagnostic information readable	Yes
Diagnostics indication LED	
Group error SF (red)	Yes
 Status indicator digital output (green) 	Yes
Potential separation	
Potential separation digital outputs	
between the channels	Yes
 between the channels, in groups of 	1
 between the channels and backplane bus 	Yes; Optocoupler
 Between the channels and the power supply of the relays 	Yes
Isolation	
Isolation tested with	1 500 V AC
connection method	
required front connector	40-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	320 g
loot modified.	

Data sheet

6ES7322-8BF00-0AB0



SIMATIC S7-300, Digital output SM 322, isolated, 8 DO, 24 V DC, 0.5A (1x 8 DO), Short-circuit protection diagnostics, 1x 20-pole

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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.	90 mA	
from backplane bus 5 V DC, max.	70 mA	
Power loss		
Power loss, typ.	5 W	
Digital outputs		
Number of digital outputs	8	
Short-circuit protection	Yes; Electronic	
Response threshold, typ.	0.75 to 1.5 A	
Limitation of inductive shutdown voltage to	L+ (-45 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	3 kΩ	
Output voltage		
● for signal "1", min.	L+ (-0.8 to -1.6 V)	
Output current		
 for signal "1" rated value 	0.5 A	
 for signal "1" permissible range for 0 to 40 °C, min. 	10 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. 	10 mA	
 for signal "1" permissible range for 40 to 60 °C, max. 	0.6 A	
 for signal "1" minimum load current 	10 mA	
 for signal "0" residual current, max. 	0.5 mA	
Output delay with resistive load		
• "0" to "1", max.	180 µs	
• "1" to "0", max.	245 µs	
Parallel switching of two outputs		
 for uprating 	No	
 for redundant control of a load 	Outputs with series diodes only	
Switching frequency		
 with resistive load, max. 	100 Hz	

 with inductive load, max. 	2 Hz
 with inductive load (acc. to IEC 60947-5-1, DC13), max. 	2 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.	4 A
Cable length	
 shielded, max. 	1 000 m
• unshielded, max.	600 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes; Parameterizable
Alarms	
Diagnostic alarm	Yes; Parameterizable
Diagnoses	
Diagnostic information readable	Yes
• Wire-break	Yes
Short-circuit	Yes
Fuse blown	No
 missing load voltage 	Yes
Diagnostics indication LED	
 Rated load voltage PWR (green) 	No
Fuse OK FSG (green)	No
Group error SF (red)	Yes
 Status indicator digital output (green) 	Yes; per channel
 Channel fault indicator F (red) 	Yes
Potential separation	
Potential separation digital outputs	
 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.	210 g
Troight, approx.	2.09