## **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)

Load voltage L+	(28%	
Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  permissible range, upper limit (DC)  permissible range, upper limit (DC)  28.8 V  Input current  from load voltage L+ (without load), max. from backplane bus 5 V DC, max.  110 mA  Power loss  Power loss, typ.  6.6 W  Digital outputs  Number of digital outputs  Short-circuit protection  Response threshold, typ.  1 A  Limitation of inductive shutdown voltage to Controlling a digital input Yes  Switching capacity of the outputs  on lamp load, max.  5 W  Load resistance range  lower limit  upper limit  4 kΩ  Output voltage  for signal "1" rated value  for signal "1" permissible range for 0 to 40 °C, min. for signal "1" permissible range for 40 to 60 °C, min. for signal "1" permissible range for 40 to 60 °C, min.  f	Supply voltage	
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. from backplane bus 5 V DC, max.	Load voltage L+	
• permissible range, upper limit (DC)  Input current  from load voltage L+ (without load), max. from backplane bus 5 V DC, max.  Power loss  Power loss, typ.  Digital outputs  Number of digital outputs  Short-circuit protection  • Response threshold, typ.  Limitation of inductive shutdown voltage to  Controlling a digital input  Switching capacity of the outputs  • on lamp load, max.  Load resistance range  • lower limit  • upper limit  • for signal "1", min.  Output current  • for signal "1" permissible range for 0 to 40 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" minimum load current  • for signal "1" minimum load current  • for signal "0" residual current, max.  0.5 mA  0 upper limit  • for verticulation of two outputs  • for uprating  • for redundant control of a load  Yes; only outputs of the same group  Switching frequency  • with resistive load, max.	<ul> <li>Rated value (DC)</li> </ul>	24 V
Input current  from load voltage L+ (without load), max.	<ul> <li>permissible range, lower limit (DC)</li> </ul>	20.4 V
from load voltage L+ (without load), max. from backplane bus 5 V DC, max.  110 mA  Power loss  Power loss  Power loss, typ.  Digital outputs  Number of digital outputs  Number of digital outputs  Number of digital outputs  Short-circuit protection Yes; Electronic  • Response threshold, typ.  Limitation of inductive shutdown voltage to  Controlling a digital input  Yes  Switching capacity of the outputs  • on lamp load, max.  5 W  Load resistance range  • lower limit  upper limit  48 Ω  upper limit  48 Ω  for signal "1", min.  Cutput voltage  • for signal "1" permissible range for 0 to 40 °C, min. • for signal "1" permissible range for 40 to 60 °C, max.  • for signal "1" permissible range for 40 to 60 °	<ul> <li>permissible range, upper limit (DC)</li> </ul>	28.8 V
From backplane bus 5 V DC, max.  Power loss Power loss, typ.    Digital outputs	Input current	
Power loss Power loss, typ.  Digital outputs  Number of digital outputs  32 Short-circuit protection  • Response threshold, typ.  Limitation of inductive shutdown voltage to Controlling a digital input  Switching capacity of the outputs  • on lamp load, max.  Load resistance range  • lower limit  • upper limit  Output voltage  • for signal "1" rated value  • for signal "1" rated value  • for signal "1" permissible range for 0 to 40 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" minimum load current  • for signal "1" minimum load current  • for signal "1" residual current, max.  • for signal "0" residual current, max.  • on "0" to "1", max.  • "1" to "0", max.  Parallel switching of two outputs  • for uprating  • for redundant control of a load  Ves; only outputs of the same group  Switching frequency  • with resistive load, max.  100 Hz	from load voltage L+ (without load), max.	160 mA
Power loss, typ.  Digital outputs  Number of digital outputs  Short-circuit protection  Response threshold, typ.  Limitation of inductive shutdown voltage to  Controlling a digital input  Yes  Switching capacity of the outputs  on lamp load, max.  I a b Controlling a digital input  Switching capacity of the outputs  on lamp load, max.  Load resistance range  invertimit  upper limit  upper limit  for signal "1", min.  Cutput voltage  of or signal "1" rated value  of or signal "1" permissible range for 0 to 40 °C, min.  of or signal "1" permissible range for 0 to 40 °C, min.  of or signal "1" permissible range for 40 to 60 °C, min.  of or signal "1" permissible range for 40 to 60 °C, min.  of or signal "1" permissible range for 40 to 60 °C, min.  of or signal "1" minimum load current  of or signal "0" residual current, max.  Output delay with resistive load  of "0" to "1", max.  of or uprating of or uprating of requency  with resistive load, max.  100 Hz	from backplane bus 5 V DC, max.	110 mA
Digital outputs   Short-circuit protection   Yes; Electronic	Power loss	
Number of digital outputs  Short-circuit protection  Response threshold, typ.  Limitation of inductive shutdown voltage to  Controlling a digital input  Yes  Switching capacity of the outputs  on lamp load, max.  5 W  Load resistance range  olower limit  upper limit  48 Ω  very limit  output voltage  for signal "1", min.  Output current  of ro signal "1" permissible range for 0 to 40 °C, min. of or signal "1" permissible range for 40 to 60 °C, min. of or signal "1" permissible range for 40 to 60 °C, max.  for signal "1" minimum load current  of or signal "1" permissible range for 40 to 60 °C, min. of or signal "1" permissible range for 40 to 60 °C, min. of or signal "1" minimum load current of or signal "1" minimum load current of or signal "0" residual current, max.  Output delay with resistive load  o"0" to "1", max. o"1" to "0", max.  Parallel switching of two outputs  of or or or or redundant control of a load  Switching frequency owith resistive load, max.  100 Hz	Power loss, typ.	6.6 W
Short-circuit protection  • Response threshold, typ. Limitation of inductive shutdown voltage to Controlling a digital input  • on lamp load, max.  • on lamp load, max.  Load resistance range  • lower limit • upper limit • upper limit • for signal "1", min.  Output voltage • for signal "1" rated value • for signal "1" permissible range for 0 to 40 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" minimum load current • for signal "1" minimum load current • for signal "0" residual current, max.  Output delay with resistive load • "0" to "1", max. • "1" to "0", max.  Parallel switching of two outputs • for uprating • for or uprating • for redundant control of a load  Switching frequency • with resistive load, max.  100 Hz	Digital outputs	
Response threshold, typ.  Limitation of inductive shutdown voltage to Controlling a digital input Yes  Switching capacity of the outputs  on lamp load, max.  It also a controlling a digital input  on lamp load, max.  It also a controlling a digital input  on lamp load, max.  It also a controlling a controlling a digital input  on lamp load, max.  It also a controlling a contro	Number of digital outputs	32
Limitation of inductive shutdown voltage to Controlling a digital input  Switching capacity of the outputs  on lamp load, max.  Load resistance range  lower limit  upper limit  thin and a separate and	Short-circuit protection	Yes; Electronic
Controlling a digital input  Switching capacity of the outputs  on lamp load, max.    S W	<ul> <li>Response threshold, typ.</li> </ul>	1 A
Switching capacity of the outputs  on lamp load, max.  5 W  Load resistance range  lower limit  upper limit  48 Ω  toutput voltage  for signal "1", min.  Output current  of r signal "1" rated value  for signal "1" permissible range for 0 to 40 °C, min.  for signal "1" permissible range for 0 to 40 °C, min.  for signal "1" permissible range for 0 to 40 °C, min.  for signal "1" permissible range for 40 to 60 °C, min.  for signal "1" permissible range for 40 to 60 °C, min.  for signal "1" minimum load current  for signal "1" minimum load current  for signal "0" residual current, max.  0.5 mA  Output delay with resistive load  o"0" to "1", max.  o"10" μax.  for one dundant control of a load  Switching frequency  with resistive load, max.  100 μz	Limitation of inductive shutdown voltage to	L+ (-53 V)
on lamp load, max. 5 W  Load resistance range     lower limit 4 k Ω     upper limit 4 k Ω  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, min. 5 mA     for signal "1" permissible range for 0 to 40 °C, min. 5 mA     for signal "1" permissible range for 40 to 60 °C, min. 5 mA     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 redundant control of a load Yes; only outputs of the same group  Switching frequency     with resistive load, max. 100 Hz	Controlling a digital input	Yes
Load resistance range	Switching capacity of the outputs	
<ul> <li>lower limit</li> <li>upper limit</li> <li>4 kΩ</li> </ul> Output voltage <ul> <li>for signal "1", min.</li> <li>L+ (-0.8 V)</li> </ul> Output current <ul> <li>for signal "1" rated value</li> <li>for signal "1" permissible range for 0 to 40 °C, min.</li> <li>for signal "1" permissible range for 0 to 40 °C, max.</li> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> <li>for signal "1" minimum load current</li> <li>for signal "0" residual current, max.</li> <li>for signal "0" residual current, max.</li> <li>0.5 mA</li> </ul> Output delay with resistive load <ul> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> <li>pon uptating</li> <li>for uprating</li> <li>for redundant control of a load</li> </ul> Yes; only outputs of the same group  Switching frequency <ul> <li>with resistive load, max.</li> </ul> 100 Hz	• on lamp load, max.	5 W
<ul> <li>upper limit</li> <li>4 kΩ</li> <li>Output voltage</li> <li>for signal "1", min.</li> <li>L+ (-0.8 V)</li> <li>Output current</li> <li>for signal "1" rated value</li> <li>for signal "1" permissible range for 0 to 40 °C, min.</li> <li>for signal "1" permissible range for 0 to 40 °C, max.</li> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> <li>for signal "1" minimum load current</li> <li>for signal "0" residual current, max.</li> <li>0.5 mA</li> <li>for signal "0" residual current, max.</li> <li>0.5 mA</li> <li>Output delay with resistive load</li> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> <li>Parallel switching of two outputs</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>No</li> <li>with resistive load, max.</li> <li>with resistive load, max.</li> <li>100 Hz</li> </ul>	Load resistance range	
Output voltage  • for signal "1", min.  Output current  • for signal "1" rated value • for signal "1" permissible range for 0 to 40 °C, min. • for signal "1" permissible range for 0 to 40 °C, min. • for signal "1" permissible range for 0 to 40 °C, max. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" minimum load current • for signal "0" residual current, max.  Output delay with resistive load  • "0" to "1", max. • "1" to "0", max.  Parallel switching of two outputs • for uprating • for redundant control of a load  Switching frequency • with resistive load, max.  100 Hz	<ul><li>lower limit</li></ul>	48 Ω
• for signal "1", min.  Output current  • for signal "1" rated value • for signal "1" permissible range for 0 to 40 °C, min. • for signal "1" permissible range for 0 to 40 °C, max. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" minimum load current • for signal "0" residual current, max.  Output delay with resistive load  • "0" to "1", max. • "1" to "0", max.  Parallel switching of two outputs • for uprating • for redundant control of a load  Switching frequency • with resistive load, max.  100 Hz	upper limit	4 kΩ
Output current  • for signal "1" rated value • for signal "1" permissible range for 0 to 40 °C, min. • for signal "1" permissible range for 0 to 40 °C, max. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" permissible range for 40 to 60 °C, min. • for signal "1" minimum load current • for signal "0" residual current, max.  Output delay with resistive load  • "0" to "1", max. • "1" to "0", max.  Parallel switching of two outputs • for uprating • for redundant control of a load  Switching frequency • with resistive load, max.  0.5 A  0.5 A  0.6 A  0.6 A  0.7 MA  0.9 M	Output voltage	
<ul> <li>for signal "1" rated value</li> <li>for signal "1" permissible range for 0 to 40 °C, min.</li> <li>for signal "1" permissible range for 0 to 40 °C, max.</li> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> <li>for signal "1" minimum load current</li> <li>for signal "0" residual current, max.</li> <li>Output delay with resistive load</li> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> <li>Parallel switching of two outputs</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>100 Hz</li> </ul>	● for signal "1", min.	L+ (-0.8 V)
<ul> <li>for signal "1" permissible range for 0 to 40 °C, min.</li> <li>for signal "1" permissible range for 0 to 40 °C, max.</li> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> <li>for signal "1" permissible range for 40 to 60 °C, max.</li> <li>for signal "1" minimum load current</li> <li>for signal "0" residual current, max.</li> <li>0.5 mA</li> </ul> Output delay with resistive load <ul> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> </ul> Dio µs  Trailed switching of two outputs  of or uprating  of or redundant control of a load  Switching frequency  with resistive load, max.  100 Hz	Output current	
<ul> <li>for signal "1" permissible range for 0 to 40 °C, max.</li> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> <li>for signal "1" permissible range for 40 to 60 °C, max.</li> <li>for signal "1" minimum load current</li> <li>for signal "0" residual current, max.</li> <li>for signal "0" residual current, max.</li> <li>0.5 mA</li> <li>Output delay with resistive load</li> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> <li>parallel switching of two outputs</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>100 Hz</li> </ul>	<ul><li>for signal "1" rated value</li></ul>	
<ul> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> <li>for signal "1" permissible range for 40 to 60 °C, max.</li> <li>for signal "1" minimum load current</li> <li>for signal "0" residual current, max.</li> <li>for signal "0" residual current, max.</li> <li>0.5 mA</li> <li>Output delay with resistive load</li> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> <li>Parallel switching of two outputs</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>100 Hz</li> </ul>		5 mA
<ul> <li>for signal "1" permissible range for 40 to 60 °C, max.</li> <li>for signal "1" minimum load current</li> <li>for signal "0" residual current, max.</li> <li>0.5 mA</li> <li>Output delay with resistive load</li> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> <li>Farallel switching of two outputs</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>0.6 A</li> <li>0.6 A</li> <li>MA</li> <li>0.5 mA</li> <li>0.5 mA</li> <li>0.5 mA</li> <li>0.5 mA</li> <li>0.6 A</li> <li>MO</li> <li>yes; only µs</li> <li>only outputs of the same group</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>100 Hz</li> </ul>		0.6 A
max.  • for signal "1" minimum load current • for signal "0" residual current, max.  Output delay with resistive load • "0" to "1", max. • "1" to "0", max.  Parallel switching of two outputs • for uprating • for redundant control of a load  Switching frequency • with resistive load, max.  5 mA  0.5 mA  100 μs  500 μs  Parallel switching of two outputs • for uprating • No • for redundant control of a load  Yes; only outputs of the same group	<ul> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> </ul>	5 mA
<ul> <li>for signal "0" residual current, max.</li> <li>Output delay with resistive load</li> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> <li>Farallel switching of two outputs</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>0.5 mA</li> <li>100 µs</li> <li>500 µs</li> <li>No</li> <li>Yes; only outputs of the same group</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>100 Hz</li> </ul>		0.6 A
Output delay with resistive load  • "0" to "1", max.  • "1" to "0", max.  Parallel switching of two outputs  • for uprating  • for redundant control of a load  Switching frequency  • with resistive load, max.  100 µs  500 µs  No  Yes; only outputs of the same group	<ul><li>for signal "1" minimum load current</li></ul>	5 mA
<ul> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> <li>Farallel switching of two outputs</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> </ul>	• for signal "0" residual current, max.	0.5 mA
<ul> <li>"1" to "0", max.</li> <li>Parallel switching of two outputs</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>500 µs</li> <li>No</li> <li>Yes; only outputs of the same group</li> </ul>	Output delay with resistive load	
Parallel switching of two outputs	● "0" to "1", max.	100 μs
<ul> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> </ul>	·	500 μs
<ul> <li>for redundant control of a load</li> <li>Switching frequency</li> <li>with resistive load, max.</li> <li>100 Hz</li> </ul>	Parallel switching of two outputs	
Switching frequency  • with resistive load, max.  100 Hz	<ul><li>for uprating</li></ul>	No
• with resistive load, max. 100 Hz		Yes; only outputs of the same group
	Switching frequency	
• with inductive load, max. 0.5 Hz	<ul><li>with resistive load, max.</li></ul>	
	<ul><li>with inductive load, max.</li></ul>	0.5 Hz

<ul> <li>with inductive load (acc. to IEC 60947-5-1, DC13), max.</li> </ul>	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	
<ul><li>shielded, max.</li></ul>	1 000 m
<ul><li>unshielded, max.</li></ul>	600 m
Interrupts/diagnostics/status information	
Alarms	No
Diagnostics function	No
Alarms	
Diagnostic alarm	No
Diagnoses	
<ul> <li>Diagnostic information readable</li> </ul>	No
Wire-break	No
Short-circuit	No
missing load voltage	No
Diagnostics indication LED	
<ul> <li>Rated load voltage PWR (green)</li> </ul>	No
<ul><li>Fuse OK FSG (green)</li></ul>	No
<ul> <li>Group error SF (red)</li> </ul>	No
<ul> <li>Status indicator digital output (green)</li> </ul>	Yes; per channel
<ul> <li>Channel fault indicator F (red)</li> </ul>	No
Potential separation	
Potential separation digital outputs	
<ul> <li>between the channels</li> </ul>	Yes
<ul> <li>between the channels, in groups of</li> </ul>	8
<ul> <li>between the channels and backplane bus</li> </ul>	Yes; Optocoupler
Isolation	
Isolation tested with	500 V DC
connection method / header	
required front connector	40-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	260 g
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