## **SIEMENS**

## **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)

Figure similar

Load voltage L*   • Rated value (DC)   24 V     • permissible range, lower limit (DC)   20.4 V     • permissible range, upper limit (DC)   20.8 V	r igure siinna		
Rated value (DC)     Permissible range, lower limit (DC)     Permissible range, upper limit (DC)     Response to the short of the short of digital outputs     Power loss, typ.  Power loss, typ.  Power loss, typ.  Power loss, typ.  Digital outputs  Number of digital outputs  16  Short-circuit protection     Pesponse threshold, typ.     In A  Limitation of inductive shutdown voltage to     L+ (-53 V)  Controlling a digital input     Yes  Switching capacity of the outputs      • on lamp load, max.  Load resistance range      • lower limit     upper limit     upper limit     upper limit     upper limit     upper limit     of or signal *1* min.  Cutput current     • 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 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* primismishe range for 40 to 60 °C, min.     • for signal *1* primismishe range for 40 to 60 °C, min.     • for signal *1* primismishe range for 40 to 60 °C, min.     • for signal *1* primismishe range for 40 to 60 °C, min.     • for signal *1* primismishe range for 40 to 60 °C, min.     • for signal *1* primismishe range for 40 to 60 °C, min.     • for signal *1* primismishe range for 50 to 40 °C, min.     • for signal *1* primismishe range for 50 to 60 °C, min.     • for signal *1* primismishe range for 50 to 60 °C, min.     • for signal *1* primismishe range for 50 to 60 °C, min.     • for signal *1* primismishe range for 50 to 60 °C, min.     • for signal *1* primismishe range for 50 to 60 °C, min.     • for signal *1* primismishe range for 50 to 60 °C, min	Supply voltage		
permissible range, lower limit (DC)	Load voltage L+		
• permissible range, upper limit (DC)    Input current	<ul> <li>Rated value (DC)</li> </ul>	24 V	
Input current       from load voltage L+ (without load), max.     80 mA       Power loss.     80 mA       Power loss, typ.     4.9 W       Digital outputs     16       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     5 W       • on lamp load, max.     5 W       Load resistance range     6 lower limit     4 kΩ       • Lower limit     4 kΩ       Output voltage     6 or signal "1" min.       • for signal "1" riated value     0.5 A       • 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" permissible range for 40 to 60 °C, max.     0.6 A       • for signal "1" permissible range for 40 to 60 °C, max.     0.5 mA       • for signal "1" permissible range for 40 to 60 °C, max.     0.5 mA       • for signal "1" permissible range for 40 to 60 °C, max.     0.5 mA       • for signal "1" permissible range for 40 to 60 °C, max.     0.5 mA       • for signal "1" permissible range for 40 to 60 °C, max.     0.5 mA       • for signal "1" minimum load cur	<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.  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  • on lamp load, max.  Load resistance range  • lover limit  • upper limit  • for signal "1", min.  Output voltage  • 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" permism load current  • for signal "0" residual current, max.  Output delay with resistive load  • "0" to "1", max.  • "1" to "0", max.  500 μs  Parallel switching of two outputs  • for uprating  • for redundant control of a load  Switching frequency	<ul> <li>permissible range, upper limit (DC)</li> </ul>	28.8 V	
From backplane bus 5 V DC, max.  Power loss, typ.  Power los.  Power lo	Input current		
Power loss, typ.    Power loss, typ.   4.9 W	from load voltage L+ (without load), max.	80 mA	
Power loss, typ.   4.9 W	from backplane bus 5 V DC, max.	80 mA	
Number of digital outputs   16	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  lower limit  upper limit  for signal "1", min.  Cutput voltage  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" permissible range for 0 to 40 °C, max.  of or signal "1" permissible range for 0 to 40 °C, max.  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 0 to 60 °C, min.  of or signal "1" permissible range for 0 to 60 °C, min.  of or signal "1" permissible range for 0 to 60 °C, min.  of or signal "1" permissible range for 0 to 60 °C, min.  of or signal "1" permissible range for 0 to 60 °C, min.  of or signal "1" permissible range for 0 to 60 °C, min.  of or signal "1" permissible range for 0 to 60 °C, min.  of or signal "1" permissible range for 0 to 60 °C, min.  of or signal "1" permissible range for 0 to 60 °C, min.  of or signal "1" permissible range for 0 to 60 °C, min.  of or signal "1" permissible range for 0 to 60 °C, min.  of or signal "0" residual current, max.  0.5 mA  Output delay with resistive load  "0" to "1", max.  of or uprating  of or redundant control of a load  No  of or redundant control of a load  Yes  Switching frequency	Power loss, typ.	4.9 W	
Short-circuit protection  Response threshold, typ.  Limitation of inductive shutdown voltage to  L+ (-53 V)  Controlling a digital input  Switching capacity of the outputs  on lamp load, max.  I bw limit  upper limit  upper limit  upper limit  for signal "1", min.  Cutput voltage  of ror signal "1" rated value  of ror signal "1" permissible range for 0 to 40 °C, min.  of ror signal "1" permissible range for 0 to 40 °C, min.  of ror signal "1" permissible range for 0 to 40 °C, min.  of ror signal "1" permissible range for 40 to 60 °C, min.  of ror signal "1" permissible range for 40 to 60 °C, min.  of ror signal "1" permissible range for 40 to 60 °C, max.  of ror signal "1" permissible range for 40 to 60 °C, max.  of ror signal "1" minimum load current  on the for signal "1" minimum load current  or of voltage with resistive load  or "0" to "1", max.  on the for uprating  of ror uprating  of ror redundant control of a load  Yes  Switching frequency	Digital outputs		
Response threshold, typ.  Limitation of inductive shutdown voltage to  L+ (-53 V)  Controlling a digital input  Pes  Switching capacity of the outputs  on lamp load, max.  Load resistance range  lower limit  upper limit  upper limit  through a digital input  supper limit  upper limit  upper limit  L+ (-0.8 V)  Cutput voltage  of riginal "1", min.  L+ (-0.8 V)  Cutput current  of riginal "1" permissible range for 0 to 40 °C, min. of riginal "1" permissible range for 0 to 40 °C, min. of riginal "1" permissible range for 40 to 60 °C, min. of riginal "1" permissible range for 40 to 60 °C, max. of riginal "1" permissible range for 40 to 60 °C, max. of riginal "1" permissible range for 40 to 60 °C, max. of riginal "1" permissible range for 40 to 60 °C, max. of riginal "0" residual current of riginal "0" residual current, max.  Ustput delay with resistive load of "0" to "1", max. of riginal "0" max.  Parallel switching of two outputs of ror redundant control of a load  No of redundant control of a load  Switching frequency	Number of digital outputs	16	
Limitation of inductive shutdown voltage to  L+ (-53 V)  Controlling a digital input  Yes  Switching capacity of the outputs  on lamp load, max.  fow lower limit  oupper limit  oupper limit  output voltage  for signal "1", min.  Cutput voltage  of ror signal "1" rated value  of ror signal "1" permissible range for 0 to 40 °C, min.  for signal "1" permissible range for 0 to 60 °C, min.  of or signal "1" permissible range for 40 to 60 °C, min.  for signal "1" permissible range for 40 to 60 °C, max.  of or signal "1" permissible range for 40 to 60 °C, max.  of or signal "1" permissible range for 40 to 60 °C, max.  of or signal "1" permissible range for 40 to 60 °C, max.  of or signal "1" residual current  of or signal "1" residual current, max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load  of "0" to "1", max.  output delay with resistive load	Short-circuit protection	Yes; Electronic	
Controlling a digital input  Switching capacity of the outputs  on lamp load, max.  Load resistance range  lower limit  upper limit  48 Ω  Utput voltage  of ro signal "1", min.  L+ (-0.8 V)  Cutput current  of ro signal "1" rated value  of ro signal "1" permissible range for 0 to 40 °C, min.  of ro signal "1" permissible range for 0 to 40 °C, max.  of ro signal "1" permissible range for 40 to 60 °C, min.  for signal "1" permissible range for 40 to 60 °C, min.  of ro signal "1" permissible range for 40 to 60 °C, max.  of ro signal "1" minimum load current  for signal "1" minimum load current  of ro signal "0" residual current, max.  Utput delay with resistive load  of "0" to "1", max.  of ro "1", max.  for uprating  of ro redundant control of a load  Switching frequency	Response threshold, typ.	1 A	
Switching capacity of the outputs  on lamp load, max.  Load resistance range  lower limit  upper limit  4 k Ω  Output voltage  of ro signal "1", min.  L+ (-0.8 V)  Output current  of ro signal "1" rated value  of ro signal "1" permissible range for 0 to 40 °C, min.  of ro signal "1" permissible range for 0 to 40 °C, min.  of ro signal "1" permissible range for 0 to 40 °C, max.  of ro signal "1" permissible range for 40 to 60 °C, min.  of ro signal "1" permissible range for 40 to 60 °C, min.  of ro signal "1" permissible range for 40 to 60 °C, min.  of ro signal "1" minimum load current  of ro signal "0" residual current, max.  Output delay with resistive load  o"0" to "1", max.  of ro "0", max.  parallel switching of two outputs  of or uprating  No  of ro redundant control of a load  Switching frequency	Limitation of inductive shutdown voltage to	L+ (-53 V)	
• on lamp load, max.  Load resistance range  • lower limit  • upper limit  4 k Ω  Output voltage  • for signal "1", min.  L+ (-0.8 V)  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, 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.  O.5 mA  Output delay with resistive load  • "0" to "1", max.  • "1" to "0", max.  Parallel switching of two outputs  • for uprating  No  • for redundant control of a load  Switching frequency	Controlling a digital input	Yes	
Load resistance range  • lower limit  48 Ω  • upper limit  4k Ω  Output voltage  • for signal "1", min.  L+ (-0.8 V)  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 0 to 40 °C, max.  • for signal "1" permissible range for 40 to 60 °C, max.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, max.  • for signal "1" permissible range for 40 to 60 °C, max.  • 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	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, max.</li> <li>for signal "1" minimum load current</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>90 μs</li> </ul> Parallel switching of two outputs <ul> <li>for uprating</li> <li>for redundant control of a load</li> </ul> Yes  Switching frequency	● 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" 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>Parallel switching of two outputs</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</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, max.  • for signal "1" permissible range for 0 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, 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	• lower limit	48 Ω	
• for signal "1", min.  L+ (-0.8 V)  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, max.  • for signal "1" permissible range for 40 to 60 °C, min.  • for signal "1" permissible range for 40 to 60 °C, 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	• 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, 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. • "1" to "0", max.  For uprating • for redundant control of a load  Switching frequency	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>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>for uprating</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</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" 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> </ul>	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> </ul> Output delay with resistive load <ul> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> </ul> Dups  Farallel switching of two outputs  of or uprating of or redundant control of a load  Yes  Switching frequency  Switching frequency	<ul><li>for signal "1" rated value</li></ul>	0.5 A	
<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>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> </ul>	<ul> <li>for signal "1" permissible range for 0 to 40 °C, min.</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> </ul> Output delay with resistive load <ul> <li>"0" to "1", max.</li> <li>"1" to "0", max.</li> </ul> Dups  Farallel switching of two outputs  of or uprating of or redundant control of a load  Yes  Switching frequency  No  Ves	<ul> <li>for signal "1" permissible range for 0 to 40 °C, max.</li> </ul>	0.6 A	
<ul> <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>500 µs</li> <li>Parallel switching of two outputs</li> <li>for uprating</li> <li>for redundant control of a load</li> <li>Switching frequency</li> </ul>	<ul> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> </ul>	5 mA	
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  O.5 mA  100 µs  500 µs  No  Yes	<ul> <li>for signal "1" permissible range for 40 to 60 °C, max.</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	<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> </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> </ul>	Output delay with resistive load		
Parallel switching of two outputs  • for uprating  • for redundant control of a load  Yes  Switching frequency	• "0" to "1", max.	100 μs	
● for uprating  ● for redundant control of a load  Yes  Switching frequency	• "1" to "0", max.	500 μs	
• for redundant control of a load  Yes  Switching frequency	Parallel switching of two outputs		
Switching frequency	• for uprating	No	
	for redundant control of a load	Yes	
with resistive load, max.	Switching frequency		
100/16	<ul> <li>with resistive load, max.</li> </ul>	100 Hz	

<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	
• shielded, max.	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	
Wire-break	No
Short-circuit	No
• Fuse blown	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>Status indicator digital output (green)</li> </ul>	Yes
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	
required front connector	20-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	190 g
- O - 0 - mk k - z - m	•

last modified:

1/16/2021