## **Data sheet**

6ES7222-1BH32-1XB0



SIMATIC S7-1200, Digital output SM 1222, 16 DO, 24 V DC, sourcing (Sinking Output), NPN transistor 0.5 A  $\,$ 

General information	
Product type designation	SM 1222, DO 16x 24 V DC/0.5 A Sink
Supply voltage	
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Input current	
from backplane bus 5 V DC, max.	140 mA
Power loss	
Power loss, typ.	2.5 W
Digital outputs	
Number of digital outputs	16
• in groups of	1
Current-sinking	Yes
Short-circuit protection	No; to be provided externally
Limitation of inductive shutdown voltage to	Typ 45 V
Switching capacity of the outputs	
with resistive load, max.	0.5 A
<ul> <li>on lamp load, max.</li> </ul>	5 W
Output voltage	
Rated value (DC)	24 V
<ul><li>for signal "0", max.</li></ul>	L+ minus 0.75 V DC with 10k Load
• for signal "1", min.	0,5 V
Output current	
<ul><li>for signal "1" rated value</li></ul>	0.5 A
<ul><li>for signal "0" residual current, max.</li></ul>	75 μA
Output delay with resistive load	
• "0" to "1", max.	20 μs
• "1" to "0", max.	350 μs
Total current of the outputs (per group)	
horizontal installation	
— up to 50 °C, max.	8 A; Current per mass
Cable length	
<ul><li>shielded, max.</li></ul>	500 m
• unshielded, max.	150 m
Interrupts/diagnostics/status information	
Alarms	
Diagnostic alarm	Yes
Diagnostics indication LED	
for status of the outputs	Yes
Potential separation	

between the channels, in groups of     between the channels and backplane bus      Degree and class of protection  IP degree of protection  IP degree of protection  Standards, approvals, certificates  CE mark  CSA approval  UL approval  Ves  CULus  Yes  FM approval  Yes  FM approval  Yes  KC approval  Yes  KC approval  Yes  FM approval  Yes  ROM (formerly C-TICK)  Yes  KC approval  Yes  Marine approval  Ambient conditions  Ambient temperature during operation   • min.  • 20 °C  • horizontal installation, min.  • 20 °C  • horizontal installation, min.  • vertical installation, min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • 40 °C  • max.  • min.  • 40 °C  • max.  • min.  • min.  • min.  • 40 °C	Potential separation digital outputs		
between the channels and backplane bus  Degree and class of protection  IP degree of protection  Standards, approvals, certificates  CE mark  CSA approval  UL approval  Ves  CULus  FM approval  RCM (formerly C-TICK)  KC approval  Yes  KC approval  Yes  Ambient conditions  Ambient temperature during operation      • min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • min.  • 40 °C  • max.  • min.  • 40 °C  • max.	· · · · · · · · · · · · · · · · · · ·	1	
Degree and class of protection  IP degree of protection  Standards, approvals, certificates  CE mark  CSA approval  Yes  UL approval  Yes  CULus  FM approval  Yes  RCM (formerly C-TICK)  Yes  KC approval  Ambient conditions  Ambient temperature during operation  • min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • min.  • 40 °C  • max.		500 V AC	
IP degree of protection IP20  Standards, approvals, certificates  CE mark Yes  CSA approval Yes  UL approval Yes  cULus Yes  FM approval Yes  RCM (formerly C-TICK) Yes  KC approval Yes  Marine approval Yes  Ambient conditions  Ambient temperature during operation  • min20 °C  • horizontal installation, min20 °C  • horizontal installation, min20 °C  • vertical installation, min20 °C  • vertical installation, max50 °C  • permissible temperature change 5°C to 55°C, 3°C / minute  Ambient temperature during storage/transportation  • min40 °C  • max40 °C  • max70 °C			
CE mark  CSA approval  Yes  CSA approval  Yes  UL approval  Yes  CUlus  Yes  FM approval  Yes  RCM (formerly C-TICK)  KC approval  Yes  Marine approval  Ambient conditions  Ambient temperature during operation  • min.  • mix.  • horizontal installation, mix.  • vertical installation, mix.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • min.  -40 °C  • max.  70 °C		IP20	
CE mark  CSA approval  Yes  UL approval  Yes  CULus  FM approval  Yes  RCM (formerly C-TICK)  KC approval  Ambient conditions  Ambient temperature during operation  • min.  • horizontal installation, min.  • vertical installation, min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • 40 °C  • max.  • min.  -40 °C  • max.  -70 °C			
UL approval  CULus  Yes  FM approval  Yes  RCM (formerly C-TICK)  Yes  KC approval  Yes  Marine approval  Ambient conditions  Ambient temperature during operation  • min.  • max.  • horizontal installation, min.  • horizontal installation, min.  • vertical installation, min.  • vertical installation, max.  • vertical installation, max.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • min.  • min.  • min.  • min.  • max.  70 °C	CE mark	Yes	
CULus  FM approval  Yes  RCM (formerly C-TICK)  Yes  KC approval  Yes  Marine approval  Ambient conditions  Ambient temperature during operation  • min.  • max.  • horizontal installation, min.  • horizontal installation, max.  • horizontal installation, min.  • vertical installation, min.  • vertical installation, max.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • min.  • min.  • min.  • min.  • max.  70 °C	CSA approval	Yes	
FM approval  RCM (formerly C-TICK)  Yes  KC approval  Marine approval  Ambient conditions  Ambient temperature during operation  • min.  • max.  • horizontal installation, min.  • horizontal installation, max.  • vertical installation, min.  • vertical installation, max.  • yertical installation, max.  • vertical installation, max.	UL approval	Yes	
RCM (formerly C-TICK)  KC approval  Marine approval  Ambient conditions  Ambient temperature during operation  • min.  • max.  • horizontal installation, min.  • horizontal installation, max.  • vertical installation, min.  • vertical installation, max.  • vertical installation,	cULus	Yes	
KC approval Yes   Marine approval Yes   Ambient conditions -20 °C   Ambient temperature during operation -20 °C   • max. 60 °C   • horizontal installation, min20 °C   • horizontal installation, max. 60 °C   • vertical installation, min20 °C   • vertical installation, max. 50 °C   • vertical installation, max. 50 °C   • permissible temperature change 5 °C to 55 °C, 3 °C / minute   Ambient temperature during storage/transportation -40 °C   • min40 °C   • max. 70 °C	FM approval	Yes	
Marine approval  Ambient conditions  Ambient temperature during operation  • min.  • max.  • horizontal installation, min.  • horizontal installation, min.  • vertical installation, min.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • min.  • max.  Yes  Yes  Yes  Ambient temperature during operation  Yes  -20 °C  -20	RCM (formerly C-TICK)	Yes	
Ambient conditions  Ambient temperature during operation  • min.  • max.  • horizontal installation, min.  • horizontal installation, max.  • horizontal installation, max.  • vertical installation, min.  • vertical installation, max.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • min.  • 40 °C  • max.  70 °C	KC approval	Yes	
Ambient temperature during operation  • min.  • max.  • horizontal installation, min.  • horizontal installation, max.  • horizontal installation, max.  • vertical installation, min.  • vertical installation, max.  • vertical installation, max.  • permissible temperature change  Ambient temperature during storage/transportation  • min.  • min.  • max.  70 °C	Marine approval	Yes	
<ul> <li>min.</li> <li>max.</li> <li>60 °C</li> <li>horizontal installation, min.</li> <li>-20 °C</li> <li>horizontal installation, max.</li> <li>60 °C</li> <li>vertical installation, min.</li> <li>-20 °C</li> <li>vertical installation, max.</li> <li>vertical installation, max.</li> <li>permissible temperature change</li> <li>5°C to 55°C, 3°C / minute</li> </ul> Ambient temperature during storage/transportation <ul> <li>min.</li> <li>-40 °C</li> <li>max.</li> <li>70 °C</li> </ul>	Ambient conditions		
<ul> <li>max.</li> <li>horizontal installation, min.</li> <li>-20 °C</li> <li>horizontal installation, max.</li> <li>60 °C</li> <li>vertical installation, min.</li> <li>-20 °C</li> <li>vertical installation, max.</li> <li>vertical installation, max.</li> <li>50 °C</li> <li>permissible temperature change</li> <li>5°C to 55°C, 3°C / minute</li> </ul> Ambient temperature during storage/transportation <ul> <li>min.</li> <li>-40 °C</li> <li>max.</li> <li>70 °C</li> </ul>	Ambient temperature during operation		
<ul> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> <li>°C</li> <li>vertical installation, max.</li> <li>°C</li> <li>permissible temperature change</li> <li>5°C to 55°C, 3°C / minute</li> </ul> Ambient temperature during storage/transportation <ul> <li>min.</li> <li>-40 °C</li> <li>max.</li> <li>70 °C</li> </ul>	• min.	-20 °C	
<ul> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> <li>vertical installation, max.</li> <li>o °C</li> <li>permissible temperature change</li> <li>5° C to 55° C, 3° C / minute</li> </ul> Ambient temperature during storage/transportation <ul> <li>min.</li> <li>-40 ° C</li> <li>max.</li> <li>70 ° C</li> </ul>	• max.	60 °C	
<ul> <li>vertical installation, min.</li> <li>vertical installation, max.</li> <li>vertical installation, max.</li> <li>permissible temperature change</li> <li>S°C to 55°C, 3°C / minute</li> </ul> Ambient temperature during storage/transportation <ul> <li>min.</li> <li>-40 °C</li> <li>max.</li> <li>70 °C</li> </ul>	<ul> <li>horizontal installation, min.</li> </ul>	-20 °C	
<ul> <li>vertical installation, max.</li> <li>permissible temperature change</li> <li>C to 55°C, 3°C / minute</li> <li>Ambient temperature during storage/transportation</li> <li>min.</li> <li>max.</li> <li>70 °C</li> </ul>	<ul> <li>horizontal installation, max.</li> </ul>	60 °C	
<ul> <li>permissible temperature change</li> <li>Ambient temperature during storage/transportation</li> <li>min.</li> <li>max.</li> <li>5°C to 55°C, 3°C / minute</li> <li>-40 °C</li> <li>70 °C</li> </ul>	<ul> <li>vertical installation, min.</li> </ul>	-20 °C	
Ambient temperature during storage/transportation  • min.	<ul> <li>vertical installation, max.</li> </ul>	50 °C	
• min.	permissible temperature change	5°C to 55°C, 3°C / minute	
● max. 70 °C	Ambient temperature during storage/transportation		
	• min.	-40 °C	
	• max.	70 °C	
Air pressure acc. to IEC 60068-2-13	Air pressure acc. to IEC 60068-2-13		
• Storage/transport, min. 660 hPa	<ul> <li>Storage/transport, min.</li> </ul>	660 hPa	
• Storage/transport, max. 1 080 hPa	Storage/transport, max.	1 080 hPa	
Relative humidity	Relative humidity		
<ul> <li>Operation at 25 °C without condensation, max.</li> <li>95 %</li> </ul>	<ul> <li>Operation at 25 °C without condensation, max.</li> </ul>	95 %	
connection method	connection method		
required front connector Yes	required front connector	Yes	
Mechanics/material	Mechanics/material		
Enclosure material (front)	Enclosure material (front)		
• Plastic Yes	Plastic	Yes	
Dimensions	Dimensions		
Width 45 mm	Width	45 mm	
Height 100 mm	Height	100 mm	
Depth 75 mm	Depth	75 mm	
Weights	Weights		
Weight, approx. 220 g	Weight, approx.	220 g	

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