## **SIEMENS**

## **Data sheet**

6ES7222-1HF32-0XB0



SIMATIC S7-1200, Digital output SM 1222, 8 DO, relay 2 A

General information	
Product type designation	SM 1222, DQ 8x relay/2 A
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.	120 mA
Digital outputs	
<ul> <li>from load voltage L+, max.</li> </ul>	11 mA/relay coil
Power loss	
Power loss, typ.	4.5 W
Digital outputs	
Number of digital outputs	8
<ul><li>in groups of</li></ul>	2
Short-circuit protection	No; to be provided externally
Switching capacity of the outputs	
<ul> <li>with resistive load, max.</li> </ul>	2 A
on lamp load, max.	30 W with DC, 200 W with AC
Output voltage	
<ul><li>Rated value (DC)</li></ul>	5 V DC to 30 V DC
Rated value (AC)	5 V AC to 250 V AC
Output current	
for signal "1" rated value	2 A
Output delay with resistive load	
• "0" to "1", max.	10 ms
• "1" to "0", max.	10 ms
Total current of the outputs (per group)	
horizontal installation	
— up to 50 °C, max.	10 A; Current per mass
Relay outputs	
<ul> <li>Number of relay outputs</li> </ul>	8
<ul> <li>Rated supply voltage of relay coil L+ (DC)</li> </ul>	24 V
Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100 000
Switching capacity of contacts	
<ul><li>— with inductive load, max.</li></ul>	2 A
— on lamp load, max.	30 W with DC, 200 W with AC
<ul> <li>— with resistive load, max.</li> </ul>	2 A

Cable length	
<ul><li>shielded, max.</li></ul>	500 m
<ul><li>unshielded, max.</li></ul>	150 m
Interrupts/diagnostics/status information	
Alarms	
Diagnostic alarm	Yes
Diagnostics indication LED	
for status of the outputs	Yes
Potential separation	
Potential separation digital outputs	
between the channels	Relays
between the channels, in groups of	2
between the channels and backplane bus	1 500 V AC for 1 minute
Permissible potential difference	1 300 V AO IOI 1 IIIIIIdic
between different circuits	750 V AC for 4 minute
	750 V AC for 1 minute
Degree and class of protection	
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	
Face follows:	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
• Fall height, max.	0.3 m; five times, in product package -20 °C
Fall height, max.  Ambient temperature during operation	
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> </ul>	-20 °C
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> </ul>	-20 °C 60 °C
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> </ul>	-20 °C 60 °C -20 °C
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> </ul>	-20 °C 60 °C -20 °C 60 °C
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> </ul>	-20 °C 60 °C -20 °C 60 °C -20 °C
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> </ul>	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 5°C to 55°C, 3°C / minute
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> <li>permissible temperature change</li> </ul>	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 5°C to 55°C, 3°C / minute
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation  min.  max.  Air pressure acc. to IEC 60068-2-13	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5°C to 55°C, 3°C / minute
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> <li>permissible temperature change</li> <li>Ambient temperature during storage/transportation</li> <li>min.</li> <li>max.</li> </ul>	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 5°C to 55°C, 3°C / minute
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation  min.  max.  Air pressure acc. to IEC 60068-2-13  Storage/transport, min.  Storage/transport, max.	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5°C to 55°C, 3°C / minute
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation  min.  max.  Air pressure acc. to IEC 60068-2-13  Storage/transport, min.	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5° C to 55° C, 3° C / minute  -40 °C 70 °C  660 hPa 1 080 hPa
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation  min.  max.  Air pressure acc. to IEC 60068-2-13  Storage/transport, min.  Storage/transport, max.	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5°C to 55°C, 3°C / minute
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> <li>permissible temperature change</li> <li>Ambient temperature during storage/transportation</li> <li>min.</li> <li>max.</li> <li>Air pressure acc. to IEC 60068-2-13</li> <li>Storage/transport, min.</li> <li>Storage/transport, max.</li> <li>Relative humidity</li> </ul>	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5° C to 55° C, 3° C / minute  -40 °C 70 °C  660 hPa 1 080 hPa
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation  min.  max.  Air pressure acc. to IEC 60068-2-13  Storage/transport, min.  Storage/transport, max.  Relative humidity  Operation at 25 °C without condensation, max.	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5° C to 55° C, 3° C / minute  -40 °C 70 °C  660 hPa 1 080 hPa
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> <li>permissible temperature change</li> <li>Ambient temperature during storage/transportation</li> <li>min.</li> <li>max.</li> <li>Air pressure acc. to IEC 60068-2-13</li> <li>Storage/transport, min.</li> <li>Storage/transport, max.</li> <li>Relative humidity</li> <li>Operation at 25 °C without condensation, max.</li> <li>Connection method</li> <li>required front connector</li> </ul>	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5° C to 55° C, 3° C / minute  -40 °C 70 °C  660 hPa 1 080 hPa
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation  min.  max.  Air pressure acc. to IEC 60068-2-13  Storage/transport, min.  Storage/transport, max.  Relative humidity  Operation at 25 °C without condensation, max.  Connection method  required front connector  Mechanics/material	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5° C to 55° C, 3° C / minute  -40 °C 70 °C  660 hPa 1 080 hPa
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> <li>permissible temperature change</li> <li>Ambient temperature during storage/transportation</li> <li>min.</li> <li>max.</li> <li>Air pressure acc. to IEC 60068-2-13</li> <li>Storage/transport, min.</li> <li>Storage/transport, max.</li> <li>Relative humidity</li> <li>Operation at 25 °C without condensation, max.</li> <li>Connection method</li> <li>required front connector</li> </ul>	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5° C to 55° C, 3° C / minute  -40 °C 70 °C  660 hPa 1 080 hPa
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> <li>permissible temperature change</li> <li>Ambient temperature during storage/transportation</li> <li>min.</li> <li>max.</li> <li>Air pressure acc. to IEC 60068-2-13</li> <li>Storage/transport, min.</li> <li>Storage/transport, max.</li> <li>Relative humidity</li> <li>Operation at 25 °C without condensation, max.</li> <li>Connection method</li> <li>required front connector</li> <li>Mechanics/material</li> <li>Enclosure material (front)</li> <li>Plastic</li> </ul>	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5°C to 55°C, 3°C / minute  -40 °C 70 °C  660 hPa 1 080 hPa 95 %  Yes
<ul> <li>Fall height, max.</li> <li>Ambient temperature during operation</li> <li>min.</li> <li>max.</li> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>vertical installation, min.</li> <li>vertical installation, max.</li> <li>permissible temperature change</li> <li>Ambient temperature during storage/transportation</li> <li>min.</li> <li>max.</li> <li>Air pressure acc. to IEC 60068-2-13</li> <li>Storage/transport, min.</li> <li>Storage/transport, max.</li> <li>Relative humidity</li> <li>Operation at 25 °C without condensation, max.</li> <li>Connection method</li> <li>required front connector</li> <li>Mechanics/material</li> <li>Enclosure material (front)</li> <li>Plastic</li> <li>Dimensions</li> </ul>	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5°C to 55°C, 3°C / minute  -40 °C 70 °C  660 hPa 1 080 hPa 95 %  Yes
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation  min.  max.  Air pressure acc. to IEC 60068-2-13  Storage/transport, min.  Storage/transport, max.  Relative humidity  Operation at 25 °C without condensation, max.  Connection method  required front connector  Mechanics/material  Enclosure material (front)  Plastic  Dimensions  Width	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5°C to 55°C, 3°C / minute  -40 °C 70 °C  660 hPa 1 080 hPa 95 %  Yes  Yes
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation  min.  max.  Air pressure acc. to IEC 60068-2-13  Storage/transport, min.  Storage/transport, max.  Relative humidity  Operation at 25 °C without condensation, max.  Connection method  required front connector  Mechanics/material  Enclosure material (front)  Plastic  Dimensions  Width  Height	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5°C to 55°C, 3°C / minute  -40 °C 70 °C  660 hPa 1 080 hPa 95 %  Yes  45 mm 100 mm
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation  min.  max.  Air pressure acc. to IEC 60068-2-13  Storage/transport, min.  Storage/transport, max.  Relative humidity  Operation at 25 °C without condensation, max.  Connection method  required front connector  Mechanics/material  Enclosure material (front)  Plastic  Dimensions  Width  Height  Depth	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5°C to 55°C, 3°C / minute  -40 °C 70 °C  660 hPa 1 080 hPa 95 %  Yes  Yes
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation  min.  max.  Air pressure acc. to IEC 60068-2-13  Storage/transport, min.  Storage/transport, max.  Relative humidity  Operation at 25 °C without condensation, max.  Connection method  required front connector  Mechanics/material  Enclosure material (front)  Plastic  Dimensions  Width  Height  Depth  Weights	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5°C to 55°C, 3°C / minute  -40 °C 70 °C  660 hPa 1 080 hPa 95 %  Yes  Yes  45 mm 100 mm 75 mm
Fall height, max.  Ambient temperature during operation  min.  max.  horizontal installation, min.  horizontal installation, max.  vertical installation, min.  vertical installation, max.  permissible temperature change  Ambient temperature during storage/transportation  min.  max.  Air pressure acc. to IEC 60068-2-13  Storage/transport, min.  Storage/transport, max.  Relative humidity  Operation at 25 °C without condensation, max.  Connection method  required front connector  Mechanics/material  Enclosure material (front)  Plastic  Dimensions  Width  Height  Depth	-20 °C 60 °C -20 °C 60 °C -20 °C 50 °C 50 °C 5°C to 55°C, 3°C / minute  -40 °C 70 °C  660 hPa 1 080 hPa 95 %  Yes  45 mm 100 mm