## SIEMENS

## Data sheet

## 6ES7221-1BH32-0XB0



SIMATIC S7-1200, Digital input SM 1221, 16 DI, 24 V DC, Sink/Source

General information	
Product type designation	SM 1221, DI 16x24 V DC
Supply voltage	
Rated value (DC)	24 V
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.	130 mA
Digital inputs	
<ul> <li>from load voltage L+ (without load), max.</li> </ul>	4 mA; per channel
output voltage / header	
supply voltage of the transmitters / header	
<ul> <li>product function / supply voltage for transmitters</li> </ul>	Yes
Power loss	
Power loss, typ.	2.5 W
Digital inputs	
Number of digital inputs	16
• in groups of	4
Input characteristic curve in accordance with IEC 61131,	Yes
type 1	
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	16
horizontal installation	40
— up to 40 °C, max.	16
— up to 50 °C, max.	16
vertical installation	16
— up to 40 °C, max. Input voltage	10
Rated value (DC)	24 V
• for signal "0"	5 V DC at 1 mA
• for signal "1"	15 V DC at 2.5 mA
Input current	13 V DO dt 2.0 m/x
<ul> <li>for signal "0", max. (permissible quiescent current)</li> </ul>	1 mA
<ul> <li>for signal "1", min.</li> </ul>	2.5 mA
• for signal "1", typ.	4 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
for interrupt inputs	

— parameterizable	Yes
Cable length	
<ul> <li>shielded, max.</li> </ul>	500 m
<ul> <li>unshielded, max.</li> </ul>	300 m
Interrupts/diagnostics/status information	
Alarms	
Diagnostic alarm	Yes
Diagnostics indication LED	
<ul> <li>for status of the inputs</li> </ul>	Yes
Potential separation	
Potential separation digital inputs	
<ul> <li>between the channels, in groups of</li> </ul>	4
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	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-20 °C
• max.	60 °C
permissible temperature change	5°C to 55°C, 3°C / minute
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
<ul> <li>Storage/transport, min.</li> </ul>	660 hPa
• Storage/transport, max.	1 080 hPa
Relative humidity	
<ul> <li>Operation at 25 °C without condensation, max.</li> </ul>	95 %
connection method / header	
required front connector	Yes
Mechanics/material	
Enclosure material (front)	
• Plastic	Yes
Dimensions	
Width	45 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	210 g
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