## **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	
• present	Yes
Power loss	
Power loss, typ.	2.5 W
Digital inputs	
Number of digital inputs	16
<ul><li>in groups of</li></ul>	4
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	16
horizontal installation	
— up to 40 °C, max.	16
— up to 50 °C, max.	16
vertical installation	
— up to 40 °C, max.	16
Input voltage	
<ul><li>Rated value (DC)</li></ul>	24 V
● for signal "0"	5 V DC at 1 mA
• for signal "1"	15 V DC at 2.5 mA
Input current	
<ul> <li>for signal "0", max. (permissible quiescent current)</li> </ul>	1 mA
• for signal "1", min.	2.5 mA
• for signal "1", typ.	4 mA
Input delay (for rated value of input voltage)	
for standard inputs	V 00 04 00 40 00 01
— 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	Selectable III groups of four
— parameterizable	Yes
Cable length	165
shielded, max.	500 m
unshielded, max.  unshielded, max.	300 m
Interrupts/diagnostics/status information	300 111
Alarms	
Diagnostic alarm	Yes
Diagnostics indication LED	165
• for status of the inputs	Yes
Potential separation	165
Potential separation digital inputs	4
between the channels, in groups of	4
Degree and class of protection	ID00
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	70 °C
Air pressure acc. to IEC 60068-2-13  • Storage/transport, min.	70 °C 660 hPa
Air pressure acc. to IEC 60068-2-13  • Storage/transport, min.  • Storage/transport, max.	70 °C
Air pressure acc. to IEC 60068-2-13  • Storage/transport, min.  • Storage/transport, max.  Relative humidity	70 °C 660 hPa 1 080 hPa
Air pressure acc. to IEC 60068-2-13  • Storage/transport, min.  • Storage/transport, max.  Relative humidity  • Operation at 25 ℃ without condensation, max.	70 °C 660 hPa
Air pressure acc. to IEC 60068-2-13  • Storage/transport, min.  • Storage/transport, max.  Relative humidity	70 °C 660 hPa 1 080 hPa
Air pressure acc. to IEC 60068-2-13  • Storage/transport, min.  • Storage/transport, max.  Relative humidity  • Operation at 25 ℃ without condensation, max.	70 °C 660 hPa 1 080 hPa
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 / header	70 °C 660 hPa 1 080 hPa 95 %
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 / header  required front connector	70 °C 660 hPa 1 080 hPa 95 %
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 / header  required front connector  Mechanics/material	70 °C 660 hPa 1 080 hPa 95 %
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 / header  required front connector  Mechanics/material  Enclosure material (front)	70 °C  660 hPa 1 080 hPa 95 %  Yes
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 / header  required front connector  Mechanics/material  Enclosure material (front)  • Plastic	70 °C  660 hPa 1 080 hPa 95 %  Yes
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 / header  required front connector  Mechanics/material  Enclosure material (front)  • Plastic  Dimensions	70 °C  660 hPa 1 080 hPa  95 %  Yes
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 / header  required front connector  Mechanics/material  Enclosure material (front)  • Plastic  Dimensions  Width	70 °C 660 hPa 1 080 hPa 95 %  Yes  Yes
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 / header  required front connector  Mechanics/material  Enclosure material (front) • Plastic  Dimensions  Width  Height Depth	70 °C 660 hPa 1 080 hPa 95 %  Yes  Yes  45 mm 100 mm
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 / header  required front connector  Mechanics/material  Enclosure material (front) • Plastic  Dimensions  Width  Height	70 °C 660 hPa 1 080 hPa 95 %  Yes  Yes  45 mm 100 mm
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 / header required front connector  Mechanics/material  Enclosure material (front) • Plastic  Dimensions  Width  Height  Depth  Weights	70 °C  660 hPa 1 080 hPa  95 %  Yes  Yes  45 mm 100 mm 75 mm