



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 style="list-style-type: none"> <li>from load voltage L+ (without load), max.</li> </ul>	4 mA; per channel	
output voltage / header		
supply voltage of the transmitters / header	<ul style="list-style-type: none"> <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	
<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Rated value (DC)</li> <li>for signal "0"</li> <li>for signal "1"</li> </ul>	24 V 5 V DC at 1 mA 15 V DC at 2.5 mA	
Input current		
<ul style="list-style-type: none"> <li>for signal "0", max. (permissible quiescent current)</li> <li>for signal "1", min.</li> <li>for signal "1", typ.</li> </ul>	1 mA 2.5 mA 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
<b>Cable length</b>	
• shielded, max.	500 m
• unshielded, max.	300 m
<b>Interrupts/diagnostics/status information</b>	
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnostics indication LED</b>	
• for status of the inputs	Yes
<b>Potential separation</b>	
<b>Potential separation digital inputs</b>	
• between the channels, in groups of	4
<b>Degree and class of protection</b>	
IP degree of protection	IP20
<b>Standards, approvals, certificates</b>	
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
<b>Ambient conditions</b>	
<b>Free fall</b>	
• Fall height, max.	0.3 m; five times, in product package
<b>Ambient temperature during operation</b>	
• min.	-20 °C
• max.	60 °C
• permissible temperature change	5°C to 55°C, 3°C / minute
<b>Ambient temperature during storage/transportation</b>	
• min.	-40 °C
• max.	70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
<b>Relative humidity</b>	
• Operation at 25 °C without condensation, max.	95 %
<b>connection method / header</b>	
required front connector	Yes
<b>Mechanics/material</b>	
<b>Enclosure material (front)</b>	
• Plastic	Yes
<b>Dimensions</b>	
Width	45 mm
Height	100 mm
Depth	75 mm
<b>Weights</b>	
Weight, approx.	210 g
<b>last modified:</b>	4/1/2022 