



SIMATIC S7-1200, Digital input SM 1221, 8 DI, 24 V DC, Sink/Source

General information		
Product type designation	SM 1221, DI 8x24 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.	105 mA	
Digital inputs		
<ul style="list-style-type: none"> from load voltage L+ (without load), max. 	4 mA; per channel	
output voltage / header		
supply voltage of the transmitters / header	<ul style="list-style-type: none"> product function / supply voltage for transmitters 	Yes
Power loss		
Power loss, typ.	1.5 W	
Digital inputs		
Number of digital inputs	8	
<ul style="list-style-type: none"> in groups of 	2	
Input characteristic curve in accordance with IEC 61131, type 1	Yes	
Number of simultaneously controllable inputs		
all mounting positions		
— up to 40 °C, max.	8	
horizontal installation		
— up to 40 °C, max.	8	
— up to 50 °C, max.	8	
vertical installation		
— up to 40 °C, max.	8	
Input voltage		
<ul style="list-style-type: none"> Rated value (DC) for signal "0" for signal "1" 	24 V 5 V DC at 1 mA 15 V DC at 2.5 mA	
Input current		
<ul style="list-style-type: none"> for signal "0", max. (permissible quiescent current) for signal "1", min. for signal "1", typ. 	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
Cable length	
• shielded, max.	500 m
• unshielded, max.	300 m
Interrupts/diagnostics/status information	
Alarms	
• Diagnostic alarm	Yes
Diagnostics indication LED	
• for status of the inputs	Yes
Potential separation	
Potential separation digital inputs	
• between the channels, in groups of	2
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
• horizontal installation, min.	-20 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-20 °C
• vertical installation, max.	50 °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	
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
Relative humidity	
• Operation at 25 °C without condensation, max.	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.	170 g
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