SIEMENS

Data sheet 6ES7221-3BF50-0XB0

Siemens EcoTech

SIMATIC S7-1200 G2: SB 1221 digital input, 8 DI 100 kHz; inputs: 8x DI 24 V DC sink/source, 100 kHz

General information	
Product type designation	SB 1221, DI 8x 24 V DC 100 kHz
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	V20 or higher
Input current	
from backplane bus 5 V DC, typ.	108 mA
Digital inputs	
● from load voltage L+ (without load), max.	6 mA; per channel
Power loss	
Power loss, typ.	2.4 W
Digital inputs	
Number of digital inputs	8; sink / source
● in groups of	8
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
Input voltage	
● Rated value (DC)	24 V
● for signal "0"	5 V DC or 0.5 mA
● for signal "1"	15 V DC at 2.5 mA
Input current	
● for signal "0", max. (permissible quiescent current)	0.5 mA
● for signal "1", min.	3.3 mA
● for signal "1", typ.	6 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 ms
for interrupt inputs	
— Parameterizable	Yes
for technological functions	
— parameterizable	Yes
Cable length	
● shielded, max.	500 m; 500 m shielded, 50 m shielded for HSC inputs
● unshielded, max.	300 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
● Diagnostic alarm	No
Diagnoses	
● Monitoring the supply voltage	No
Diagnostics indication LED	
● DIAG LED	Yes
● for status of the inputs	Yes
Potential separation	
Potential separation digital inputs	
● between the channels	No

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● between the channels, in groups of	8
● Number of potential groups	1
● between the channels and backplane bus	Yes; 707 V DC (type test)
Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
Siemens Eco Profile (SEP)	Siemens EcoTech
CE mark	Yes
CSA approval	No
UL approval	Yes
cULus	Yes
FM approval	No
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	No
Ecological footprint	
● environmental product declaration	Yes; type 2 acc. to ISO 14021
Global warming potential	
— global warming potential, (total) [CO2 eq]	9.53 kg
— global warming potential, (during production) [CO2 eq]	3.86 kg
— global warming potential, (during operation) [CO2 eq]	5.74 kg
— global warming potential, (after end of life cycle) [CO2 eq]	-0.086 kg
Ambient conditions	
Free fall	
● Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
● min.	-20 °C
● max.	40 °C; at max. voltages and max. specifications
● horizontal installation, min.	-20 °C
● horizontal installation, max.	60 °C; at rated voltages, 50 % of max. specification and alternate IO active
● vertical installation, min.	-20 °C
● vertical installation, max.	50 °C; at rated voltages, 50 % of max. specification and alternate IO active
Ambient temperature during storage/transportation	
● min.	-40 °C
● max.	70 °C
Air pressure acc. to IEC 60068-2-13	
● Operation, min.	540 hPa
● Operation, max.	1 140 hPa
● Storage/transport, min.	540 hPa
● Storage/transport, max.	1 140 hPa
Altitude during operation relating to sea level	
● Installation altitude, min.	-1 000 m
● Installation altitude, max.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Relative humidity	
● Operation at 25 °C without condensation, max.	95 %
Vibrations	
● Vibration resistance during operation acc. to IEC 60068-2-6	3.5 mm from 5 - 8.4 Hz, 1g from 8.4 - 150 Hz
● Operation, tested according to IEC 60068-2-6	Yes
Shock testing	
● tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Pollutant concentrations	
● SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60 % condensation-free
Mechanics/material	
Enclosure material (front)	
● plastic	Yes

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Dimensions	
Width	15 mm
Height	62 mm
Depth	63 mm

Weights	
Weight, approx.	26 g

Classifications

	Version	Classification
eClass	16	27-24-22-04
eClass	14	27-24-22-04
eClass	12	27-24-22-04
eClass	9.1	27-24-22-04
eClass	9	27-24-22-04
eClass	8	27-24-22-04
eClass	7.1	27-24-22-04
eClass	6	27-24-22-04
ETIM	10	EC001419
ETIM	9	EC001419
ETIM	8	EC001419
ETIM	7	EC001419

Approvals / Certificates

General Product Approval

Miscellaneous | Manufacturer Declaration

General Product Approval

China RoHS | Manufacturer Declaration

EMV | **For use in hazardous locations**

Miscellaneous | CCC-Ex | CCC-Ex

Test Certificates | **Maritime application**

Type Test Certificates/Test Report | NK / Nippon Kaiji Kyokai

Maritime application | **Environment**

KR (Korean Register of Shipping)

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