

SIMATIC S7-1200 basic controller

I/O modules

Digital modules

SB 1221 digital input modules

Overview



- Digital inputs as a supplement to the integral I/O of SIMATIC S7-1200 CPUs
- Can be plugged directly into the CPU

Technical specifications

Article number	6ES7221-3AD30-0XB0	6ES7221-3BD30-0XB0
	SIGNAL BOARD SB 1221, 4 DI 5VDC 200KHZ	SIGNAL BOARD SB 1221, 4 DI 24VDC 200KHZ
Product type designation		
Input current		
from backplane bus 5 V DC, typ.	50 mA	50 mA
Output voltage		
Power supply to the transmitters		
• Supply current, max.	4 mA; per channel	4 mA; per channel
Power losses		
Power loss, typ.	1 W	1 W
Digital inputs		
Number of digital inputs	4; Current-sourcing	4; Current-sourcing
• In groups of	1	1
Input characteristic curve in accordance with IEC 61131, type 1	Yes	
Input characteristic curve in accordance with IEC 61131, type 2		Yes
Number of simultaneously controllable inputs		
all mounting positions		
- up to 40 °C, max.	4	4
Input voltage		
• Type of input voltage	DC	DC
• Rated value (DC)	5 V	24 V
• for signal "0"	0 to 1 V	0 to 5 V
• for signal "1"	2 to 6 V	
Input current		
• for signal "0", max. (permissible quiescent current)	3 mA	2 mA
• for signal "1", min.	6 mA	5.8 mA
• for signal "1", typ.		14 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	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
- at "0" to "1", max.	2 µs	2.5 µs
for interrupt inputs		
- Parameterizable	Yes	Yes
for counter/technological functions		
- Parameterizable	Yes	Yes

Technical specifications (continued)

Article number	6ES7221-3AD30-0XB0 SIGNAL BOARD SB 1221, 4 DI 5VDC 200KHZ	6ES7221-3BD30-0XB0 SIGNAL BOARD SB 1221, 4 DI 24VDC 200KHZ
Cable length		
• shielded, max.	50 m; shielded, twisted pair	50 m; Standard input: 500 m, high-speed counters: 50 m
Digital outputs		
Number of digital outputs	0	0
short-circuit protection	No	No
Interrupts/diagnostics/ status information		
Alarms		
• Alarms	Yes	Yes
Diagnostic messages		
• Diagnostic functions	Yes	Yes
Diagnostics indication LED		
• for status of the inputs	Yes	Yes
Degree and class of protection		
Degree of protection to EN 60529		
• IP20	Yes	Yes
Standards, approvals, certificates		
Marine approval		
• Germanischer Lloyd (GL)	Yes	Yes
Ambient conditions		
Free fall		
• Drop height, max. (in packaging)	0.3 m; five times, in dispatch package	0.3 m; five times, in dispatch package
Ambient temperature in operation		
• Permissible temperature range	0 °C to 55 °C horizontal installation, 0 °C to 45 °C vertical installation	-20 °C to +60 °C horizontal mounting, -20 °C to 50 °C vertical mounting, 95% humidity, non-condensing
• Min.	0 °C	-20 °C
• max.	55 °C	60 °C
Storage/transport temperature		
• Min.	-40 °C	-40 °C
• max.	70 °C	70 °C
Air pressure acc. to IEC 60068-2-13		
• Storage/transport, min.	660 hPa	660 hPa
• Storage/transport, max.	1 080 hPa	1 080 hPa
Relative humidity		
• Permissible range (without condensation) at 25 °C	95 %	95 %
Mechanics/material		
Type of housing (front)		
• plastic	Yes	Yes
Dimensions		
Width	38 mm	38 mm
Height	62 mm	62 mm
Depth	21 mm	21 mm
Weights		
Weight, approx.	40 g	40 g

Ordering data**SB 1221 Signal Board
digital input modules**

4 inputs, 5 V DC, 200 kHz, sourcing
 4 inputs, 24 V DC, 200 kHz,
 sourcing

Article No.

6ES7221-3AD30-0XB0
6ES7221-3BD30-0XB0

Article No.**Terminal block (spare part)**

for Signal Board
 with 6 screws, gold-plated; 4 pcs.

6ES7292-1BF30-0XA0