

**Overview**

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

**Technical specifications**

Article number	<b>6ES7223-0BD30-0XB0</b>	<b>6ES7223-3AD30-0XB0</b>	<b>6ES7223-3BD30-0XB0</b>
	SIGNAL BOARD SB1223, 2 DI/2 DO	SIGNAL BOARD SB 1223, 2DI/2DQ 5V 200KHZ	SIGNAL BOARD SB 1223, 2DI/2DQ 24V 200KHZ
<b>Product type designation</b>			
<b>Supply voltage</b>			
permissible range, lower limit (DC)	20.4 V		
permissible range, upper limit (DC)	28.8 V		
<b>Input current</b>			
from backplane bus 5 V DC, typ.	50 mA	50 mA	50 mA
<b>Output voltage</b>			
<b>Power supply to the transmitters</b>			
• Supply current, max.	4 mA; per channel	4 mA; per channel	4 mA; per channel
<b>Power losses</b>			
Power loss, typ.	1 W	1 W	1 W
<b>Digital inputs</b>			
Number of digital inputs	2; Current-sinking	2; Current-sourcing	2; Current-sourcing
• In groups of	1	1	1
Input characteristic curve in accordance with IEC 61131, type 1	Yes	Yes	Yes
<b>Number of simultaneously controllable inputs</b>			
<b>all mounting positions</b>			
- up to 40 °C, max.	2	2	2
<b>Input voltage</b>			
• Type of input voltage	DC	DC	DC
• Rated value (DC)	24 V	5 V	24 V
• for signal "0"	0 to 5 V	0 to 1 V	0 to 5 V
• for signal "1"		2 to 6 V	
<b>Input current</b>			
• for signal "0", max. (permissible quiescent current)	1 mA	3 mA	2 mA
• for signal "1", min.		6 mA	5.8 mA
• for signal "1", typ.	0.5 A		14 mA

**SIMATIC S7-1200 basic controller**

I/O modules

Digital modules

**SB 1223 digital input/output modules****Technical specifications (continued)**

Article number	<b>6ES7223-0BD30-0XB0</b> SIGNAL BOARD SB1223, 2 DI/2 DO	<b>6ES7223-3AD30-0XB0</b> SIGNAL BOARD SB 1223, 2DI/2DQ 5V 200KHZ	<b>6ES7223-3BD30-0XB0</b> SIGNAL BOARD SB 1223, 2DI/2DQ 24V 200KHZ
<b>Input delay (for rated value of input voltage) for standard inputs</b>			
- 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	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 µs	2.5 µs
- at "1" to "0", max.	10 µs		
<b>for interrupt inputs</b>			
- Parameterizable	Yes	Yes	Yes
<b>for counter/technological functions</b>			
- Parameterizable	Yes	Yes	Yes
<b>Cable length</b>			
• shielded, max.	500 m	50 m	Standard input: 500 m, high-speed counters: 50 m
• Unshielded, max.	300 m		
<b>Digital outputs</b>			
Number of digital outputs	2; MOSFET, solid-state (current-sinking/current-sourcing)	2; MOSFET, solid-state (current-sinking/current-sourcing)	2; MOSFET, solid-state (current-sinking/current-sourcing)
• In groups of	1	1	1
short-circuit protection	No	No	No
<b>Switching capacity of the outputs</b>			
• with resistive load, max.	0.5 A	0.1 A	0.1 A
• on lamp load, max.	5 W		
<b>Load resistance range</b>			
• upper limit	0.6 Ω	5 Ω	10 Ω
<b>Output voltage</b>			
• Rated value (DC)	24 V	5 V	24 V
• for signal "0", max.	0.1 V; with 10 kOhm load	0.4 V	0.1 V; with 10 kOhm load
• for signal "1", min.	20 V	L+ (-0.5 V)	20 V
• for signal "1", max.		6 V	
<b>Output current</b>			
• for signal "1" rated value	0.5 A	0.1 A	0.1 A
• for signal "1" permissible range, max.		0.11 A	
• for signal "0" residual current, max.	10 µA		10 µA
<b>Cable length</b>			
• shielded, max.	500 m	50 m	50 m
• Unshielded, max.	150 m		
<b>Interrupts/diagnostics/ status information</b>			
<b>Alarms</b>			
• Alarms	Yes	Yes	Yes
<b>Diagnostic messages</b>			
• Diagnostic functions	Yes	Yes	Yes
<b>Diagnostics indication LED</b>			
• for status of the inputs	Yes	Yes	Yes
• For status of the outputs	Yes	Yes	Yes
<b>Degree and class of protection</b>			
Degree of protection to EN 60529			
• IP20	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>			
<b>Marine approval</b>			
• Germanischer Lloyd (GL)	Yes	Yes	Yes

**Technical specifications** (continued)

Article number	<b>6ES7223-0BD30-0XB0</b> SIGNAL BOARD SB1223, 2 DI/2 DO	<b>6ES7223-3AD30-0XB0</b> SIGNAL BOARD SB 1223, 2DI/2DQ 5V 200KHZ	<b>6ES7223-3BD30-0XB0</b> SIGNAL BOARD SB 1223, 2DI/2DQ 24V 200KHZ
<b>Ambient conditions</b>			
<b>Free fall</b>			
• Drop height, max. (in packaging)	0.3 m; five times, in dispatch package	0.3 m; five times, in dispatch package	0.3 m; five times, in dispatch package
<b>Ambient temperature in operation</b>			
• Permissible temperature range	0 °C to 55 °C horizontal installation, 0 °C to 45 °C vertical installation	0 °C to 55 °C horizontal installation, 0 °C to 45 °C vertical installation	0 °C to 55 °C horizontal installation, 0 °C to 45 °C vertical installation
• Min.	0 °C	0 °C	0 °C
• max.	55 °C	55 °C	55 °C
<b>Storage/transport temperature</b>			
• Min.	-40 °C	-40 °C	-40 °C
• max.	70 °C	70 °C	70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>			
• Storage/transport, min.	660 hPa	660 hPa	660 hPa
• Storage/transport, max.	1 080 hPa	1 080 hPa	1 080 hPa
<b>Relative humidity</b>			
• Permissible range (without condensation) at 25 °C	95 %	95 %	95 %
<b>Mechanics/material</b>			
Type of housing (front)			
• plastic	Yes	Yes	Yes
<b>Dimensions</b>			
Width	38 mm	38 mm	38 mm
Height	62 mm	62 mm	62 mm
Depth	21 mm	21 mm	21 mm
<b>Weights</b>			
Weight, approx.	40 g	40 g	40 g

**Ordering data****SB 1223 digital input/output signal board**

2 inputs, 24 V DC,  
IEC type 1 current sinking;  
2 24 V DC transistor outputs,  
0.5 A, 5 W;  
can be used as HSC  
at up to 30 kHz

**6ES7223-0BD30-0XB0**

2 inputs, 5 V DC, 200 kHz  
2 outputs 5 V DC, 0.1 A, 200 kHz

**6ES7223-3AD30-0XB0**

2 inputs, 24 V DC, 200 kHz  
2 outputs 24 V DC, 0.1 A, 200 kHz

**6ES7223-3BD30-0XB0****Terminal block (spare part)**

for signal board  
with 6 screws, gold-plated; 4 pcs.

**Article No.****6ES7292-1BF30-0XA0**