## SIEMENS

## Data sheet

## 6ES7223-1PL32-0XB0

SIMATIC S7-1200, DIGITAL I/O SM 1223, 16DI / 16DO, 16DI DC 24 V, SINK/SOURCE, 16DO, RELAY 2A



Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
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.	180 mA
Digital inputs	
• from load voltage L+ (without load), max.	4 mA/input 11 mA/relay
Output voltage	
Power supply to the transmitters	
• present	Yes
Power loss	
Power loss, typ.	10 W
Digital inputs	
Number of digital inputs	16
• in groups of	2

6/131, type 1Number of simultaneously controllable inputsall mouning positions- up to 40 °C, max.16- up to 40 °C, max.16- up to 50 °C, max.16- up to 50 °C, max.16Input onling installation1- up to 50 °C, max.16Input onlingDC1 vp of only voltageDC- rigo for hvoltageDC- rigo for hvoltageDC- rigo for hvoltageDC- rigo for hvoltageSV DC at 1 mA- for signal °C, max. (permissible quiescent current)1 mA- for signal °C, max. (permissible quiescent current)1 mA- for signal °T, min.2.5 mA- for signal °T, min.5.0 CL 2.5 mA- prametorizableYes- parametorizableYes- parametorizableYes- parametorizableYes- parametorizableSolo ma- unshielded, max.6.00 m- binkilded, max.16- for signal rotectionNot to top rotection- hushielded, max.16- hushielded, max.16- for signal rotectionNot top rotection- for signal rotection16- for signal rotectionNot top rotection- hushielded, max.16- hushielded, max.16- for signal rotection <td< th=""><th>Input characteristic curve in accordance with IEC</th><th>Yes</th></td<>	Input characteristic curve in accordance with IEC	Yes
all mounting positions         16	-	
	Number of simultaneously controllable inputs	
	all mounting positions	
	— up to 40 °C, max.	16
Leptic B of C, max.16uertical installation16Input only contageDCInput only contage24 VInput ourrent15 V DC at 2.5 mAInput ourrent2.5 mAInput ourrent inputs2.5 mAInput ourrent inputs2.5 mAInput ourrent inputs1.6 ms, 3.2 ms, 6.4 ms and 12.8 msInput ourrent inputsYesInput ourrent inputs1.6 msInput ourrent inputs1.6 ms<	horizontal installation	
vertical installation          up to 40 °C, max.         16           Input voltage         DC           • Rated value (DC)         24 V           • for signal °0"         5 V DC at 1 mA           • for signal °1"         15 V DC at 2.5 mA           Input current         1 mA           • for signal °1", max. (permissible quiescent current)         2.5 mA           • for signal °1", min.         2.5 mA           • for signal °1", typ.         4 mA           Input delay (for rated value of input voltage)         5 v DC at 1 mS, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, 16 rs signal °1", typ.           • for signal °1", typ.         4 mA           Input delay (for rated value of input voltage)         For standard inputs           •	— up to 40 °C, max.	16
	— up to 50 °C, max.	16
Input voltage         DC           • Rated value (DC)         24 V           • for signal "0"         5 V DC at 1 mA           • for signal "1"         5 V DC at 2.5 mA           Input current         1 mA           • for signal "1", min.         2.5 mA           • for signal "1", min.         4 mA           • for signal "1", typ.         4 mA           Input delay (for rated value of input voltage)         • for signal "1", typ.           • for signal "1", typ.         4 mA           Input delay (for rated value of input voltage)         • for signal "1", typ.           • for signal "1", typ.         4 mA           Input delay (for rated value of input voltage)         • for signal "1", typ.           • for signal "1", typ.         5 V DC at 5.0 Ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four           • 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           • 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           • on ingroups of         16           • in groups of         16           • in groups of         4           Short-circuit protection         No; to be provided externally           Switching capacity of the outputs <td>vertical installation</td> <td></td>	vertical installation	
• Type of input voltageDC• Rated value (DC)24 V• for signal "0"5 V DC at 1 mA• for signal "1"15 V DC at 2.5 mAInput current1 mA• for signal "0", max. (permissible quiescent current)1 mA• for signal "1", min.2.5 mA• for signal "1", typ.4 mAInput delay (for rated value of input voltage)	— up to 40 °C, max.	16
• Rated value (DC)       24 V         • for signal "0"       5 V DC at 1 mA         • for signal "0", max. (permissible quiescent current)       1mA         • for signal "1", min.       2.5 mA         • for signal "1", min.       2.5 mA         • for signal "1", typ.       4 mA         Input delay (for rated value of input voltage)       -         • for signal "1", typ.       4 mA         Input delay (for rated value of input voltage)       -         • for signal "1", typ.       4 mA         Input delay (for rated value of input voltage)       -         • for signal "1", typ.       4 mA         Input delay (for rated value of input voltage)       -         • for signal "1", typ.       4 mA         Input delay (for rated value of input voltage)       -         • for signal "1", typ.       9 for 3.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, 3.2 ms, 6.4 ms, 3.2 ms, 6.4 ms and 12.8 ms, 3.2 ms, 6.4 ms, 3.2	Input voltage	
Intervent5 V DC at 1 mAi for signal "0"5 V DC at 2.5 mAInput current1 mAcurrent)1 mAi for signal "1", min.2.5 mAi for signal "1", min.2.5 mAi for signal "1", typ.4 mAInput delay (for rated value of input voltage)for standard inputsi for signal manuferizableYes; 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 fourfor interrupt inputs— parameterizableYes; 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 fourfor interrupt inputs— parameterizableYesCable length— unshielded, max.500 m• unshielded, max.300 mDigital outputs16i in groups ofAShort-circuit protectionNo; to be provided externallySwitching capacity of the outputs2A• with resistive load, max.2A• on lamp load, max.5 VDC to 30 V DCOutput voltage5 VDC to 30 V DC• Rated value (DC)5 VDC to 30 V DC• Rated value (DC)5 VDC to 30 V DC• Rated value (AC)5 VDC to 30 V DC• Rated value (AC)5 VDC to 30 V DC• Rated value (AC)5 VAC to 250 V ACOutput current	<ul> <li>Type of input voltage</li> </ul>	DC
• for signal "1"         15 V DC at 2.5 mA           Input current         1 mA           • for signal "0", max. (permissible quiescent current)         1 mA           • for signal "1", min.         2.5 mA           • for signal "1", typ.         4 mA           Input delay (for rated value of input voltage)         5 main and the standard inputs           • for signal "1", typ.         4 mA           Input delay (for rated value of input voltage)         5 main and the 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           • 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           • parameterizable         Yes           Cable length         -           • unshielded, max.         500 m           • unshielded, max.         300 m           • unshielded, max.         16           • in groups of         4           Short-circuit protection         No: to be provided externally           Swithing capacity of the outputs         2 A           • on lamp load, max.         30 W with DC, 200 W with AC <t< td=""><td>• Rated value (DC)</td><td>24 V</td></t<>	• Rated value (DC)	24 V
Input current           • for signal "0", max. (permissible quiescent current)         1 mA           • for signal "1", min.         2.5 mA           • for signal "1", typ.         4 mA           Input delay (for rated value of input voltage)         4 mA           input delay (for rated value of input voltage)         5 ma (2.5 ma (2	● for signal "0"	5 V DC at 1 mA
• for signal "0", max. (permissible quiescent current)       1 mA         • for signal "1", min.       2.5 mA         • for signal "1", typ.       4 mA         Input delay (for rated value of input voltage)       4 mA         Input delay (for rated value of input voltage)       5 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       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       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       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       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       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       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         shielded, max.       500 m         unshielded, max.       300 m         origital outputs       16         in groups of       A         Short-circuit protection       No; to be provided externally         Switching capacity of the outputs       2 A         on lamp load, max	● for signal "1"	15 V DC at 2.5 mA
current)       2.5 mA         • for signal "1", min.       2.5 mA         • for signal "1", typ.       4 mA         Input delay (for rated value of input voltage)       for signal "1", typ.         for standard inputs       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       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       Solo m       300 m         • unshielded, max.       300 m       300 m         Digital outputs       16       16         • in groups of       Number of digital outputs       16         in groups of       No; to be provided externally       Switching capacity of the outputs         with resistive load, max.       2.A       30 W with DC, 200 W with AC         Output voltage       Si VDC to 30 V DC       5 V AC to 250 V AC         Output current       5 V AC to 250 V AC       5 V AC to 250 V AC	Input current	
• for signal "1", min.2.5 mA• for signal "1", typ.4 mAInput delay (for rated value of input voltage)for standard inputs parameterizableYes; 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 fourfor interrupt inputsYes parameterizableYesCable lengthYes• shielded, max.500 m• unshielded, max.300 m• unshielded, max.61• in groups of4Short-circuit protectionNo; to be provided externallySwitching capacity of the outputs16• with resistive load, max.2 A• on lamp load, max.2 A• on lamp load, max.5 VDC to 30 V DC• Rated value (DC)5 VDC to 30 V DC• Rated value (AC)5 V DC to 30 V DC• Stort Co 250 V AC5 V AC to 250 V ACOutput current	• for signal "0", max. (permissible quiescent	1 mA
• for signal "1", typ.         4 mA           Input delay (for rated value of input voltage)         5           for standard inputs         Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, aselectable in groups of four           for interrupt inputs         Yes           — parameterizable         Yes           Cable length         Yes           • unshielded, max.         500 m           • unshielded, max.         300 m           Digital outputs         4           Number of digital outputs         16           • in groups of         Av; to be provided externally           Short-circuit protection         No; to be provided externally           Switching capacity of the outputs         2 A           • with resistive load, max.         2 A           • on lamp load, max.         300 W with DC, 200 W with AC           Output voltage         5 V DC to 30 V DC           • Rated value (DC)         5 V DC to 30 V DC           • Rated value (AC)         5 V AC to 250 V AC           Output current         5 V AC to 250 V AC	current)	
Input delay (for rated value of input voltage)           for standard inputs	<ul> <li>for signal "1", min.</li> </ul>	2.5 mA
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       selectable in groups of four         parameterizable       Yes         Cable length       Yes         • shielded, max.       500 m         • unshielded, max.       300 m         • unshielded, max.       500 m         • unshielded, max.       500 m         • unshielded, max.       16         • in groups of       4         Short-circuit protection       No; to be provided externally         Switching capacity of the outputs       16         • on lamp load, max.       2 A         • on lamp load, max.       300 W with DC, 200 W with AC         Output voltage       5 V DC to 30 V DC         • Rated value (DC)       5 V DC to 30 V DC         • Rated value (AC)       5 V AC to 250 V AC         Output current       2 A	● for signal "1", typ.	4 mA
parameterizableYes; 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 fourfor interrupt inputsYes parameterizableYesCable length500 m- shielded, max.500 m- unshielded, max.300 m- by inplication of digital outputs16- in groups of4Short-circuit protectionNo; to be provided externallySwitching capacity of the outputs04- with resistive load, max.2AOutput voltage300 with DC, 200 W with ACOutput voltage5 V DC to 30 V DC- Rated value (DC)5 V DC to 30 V DC- Rated value (AC)5 V AC to 250 V ACOutput current for signal "1" permissible range, max.2A	Input delay (for rated value of input voltage)	
interrupt inputs         inparameterizable       Yes         Cable length       500 m         inshielded, max.       300 m         unshielded, max.       300 m         Digital outputs       16         in groups of       4         Short-circuit protection       Not to be provided externally         Switching capacity of the outputs       10 Not to be provided externally         in groups of       300 With DC, 200 W with AC         Switching capacity of the outputs       2 A         in anna load, max.       2 A         on lamp load, max.       300 With DC, 200 W with AC         Output voltage       5V DC to 30 V DC         i. Rated value (DC)       5V DC to 30 V DC         i. Rated value (AC)       5V AC to 250 V AC         Output current       2 A	for standard inputs	
— parameterizableYesCable length500 m• shielded, max.500 m• unshielded, max.300 mDigital outputsNumber of digital outputs16• in groups of4Short-circuit protectionNo; to be provided externallySwitching capacity of the outputs2 A• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput voltage5 V DC to 30 V DC• Rated value (DC)5 V DC to 30 V DC• Rated value (AC)2 A• for signal "1" permissible range, max.2 A• for signal "1" permissible range, max.2 A	— parameterizable	
Cable length       500 m         • shielded, max.       300 m         • unshielded, max.       300 m         Digital outputs         Number of digital outputs       16         • in groups of       4         Short-circuit protection       No; to be provided externally         Switching capacity of the outputs       2 A         • on lamp load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output voltage       5 V DC to 30 V DC         • Rated value (DC)       5 V DC to 30 V DC         • Rated value (AC)       5 V AC to 250 V AC         Output current       2 A	for interrupt inputs	
• shielded, max.500 m• unshielded, max.300 mDigital outputs300 mNumber of digital outputs16• in groups of4Short-circuit protectionNo; to be provided externallySwitching capacity of the outputs10• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput voltage5 V DC to 30 V DC• Rated value (DC)5 V DC to 30 V DC• Rated value (AC)5 V AC to 250 V ACOutput current2 A• for signal "1" permissible range, max.2 A	— parameterizable	Yes
• unshielded, max.300 mDigital outputsNumber of digital outputs16• in groups of4Short-circuit protectionNo; to be provided externallySwitching capacity of the outputs0• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput voltage5 V DC to 30 V DC• Rated value (DC)5 V DC to 30 V DC• Rated value (AC)5 V AC to 250 V ACOutput current2 A• for signal "1" permissible range, max.2 A	Cable length	
Digital outputs       16         Number of digital outputs       16         • in groups of       4         Short-circuit protection       No; to be provided externally         Switching capacity of the outputs       2 A         • with resistive load, max.       2 A         • on lamp load, max.       30 W with DC, 200 W with AC         Output voltage       5 V DC to 30 V DC         • Rated value (DC)       5 V DC to 30 V DC         • Rated value (AC)       5 V AC to 250 V AC         Output current       2 A	<ul> <li>shielded, max.</li> </ul>	500 m
Number of digital outputs16• in groups of4Short-circuit protectionNo; to be provided externallySwitching capacity of the outputs2• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput voltage5 V DC to 30 V DC• Rated value (DC)5 V AC to 250 V ACOutput current5 V AC to 250 V AC	• unshielded, max.	300 m
Number of digital outputs16• in groups of4Short-circuit protectionNo; to be provided externallySwitching capacity of the outputs2• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput voltage5 V DC to 30 V DC• Rated value (DC)5 V AC to 250 V ACOutput current5 V AC to 250 V AC	Digital outputs	
Short-circuit protection         No; to be provided externally           Switching capacity of the outputs         2 A           • with resistive load, max.         2 A           • on lamp load, max.         30 W with DC, 200 W with AC           Output voltage         5 V DC to 30 V DC           • Rated value (DC)         5 V AC to 250 V AC           Output current         2 A           • for signal "1" permissible range, max.         2 A		16
Switching capacity of the outputs• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput voltage5 V DC to 30 V DC• Rated value (DC)5 V DC to 30 V DC• Rated value (AC)5 V AC to 250 V ACOutput current2 A• for signal "1" permissible range, max.2 A	• in groups of	4
• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with ACOutput voltage5 V DC to 30 V DC• Rated value (DC)5 V AC to 250 V AC• Rated value (AC)5 V AC to 250 V ACOutput current2 A	Short-circuit protection	No; to be provided externally
• on lamp load, max.30 W with DC, 200 W with ACOutput voltage5 V DC to 30 V DC• Rated value (DC)5 V DC to 30 V DC• Rated value (AC)5 V AC to 250 V ACOutput current2 A	Switching capacity of the outputs	
Output voltage       • Rated value (DC)       • Rated value (AC)       5 V DC to 30 V DC       5 V AC to 250 V AC       Output current       • for signal "1" permissible range, max.	<ul> <li>with resistive load, max.</li> </ul>	2 A
• Rated value (DC)     5 V DC to 30 V DC       • Rated value (AC)     5 V AC to 250 V AC       Output current     2 A	• on lamp load, max.	30 W with DC, 200 W with AC
Rated value (AC) 5 V AC to 250 V AC Output current     for signal "1" permissible range, max. 2 A	Output voltage	
Output current       • for signal "1" permissible range, max.       2 A	Rated value (DC)	5 V DC to 30 V DC
Output current • for signal "1" permissible range, max. 2 A	Rated value (AC)	5 V AC to 250 V AC
Output delay with resistive load	• for signal "1" permissible range, max.	2 A
	Output delay with resistive load	

• "0" to "1" mov	10 ms
• "0" to "1", max.	10 ms
• "1" to "0", max.	10 115
Total current of the outputs (per group) horizontal installation	
	8 A; Current per mass
— up to 50 °C, max.	o A, Current per mass
Relay outputs	16
Number of relay outputs	
• Rated supply voltage of relay coil L+ (DC)	24 V
• Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100 000
Switching capacity of contacts	
— with inductive load, max.	2 A
— on lamp load, max.	30 W with DC, 200 W with AC
— with resistive load, max.	2 A
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Interrupts/diagnostics/status information	
Alarms	
Diagnostic alarm	Yes
Diagnostics indication LED	
<ul> <li>for status of the inputs</li> </ul>	Yes
<ul> <li>for status of the outputs</li> </ul>	Yes
<ul> <li>Status indicator digital output (green)</li> </ul>	Yes
<ul> <li>Status indicator digital input (green)</li> </ul>	Yes
Potential separation	
Potential separation digital inputs	
<ul> <li>between the channels, in groups of</li> </ul>	2
Potential separation digital outputs	
• between the channels	Relays
<ul> <li>between the channels, in groups of</li> </ul>	4
<ul> <li>between the channels and backplane bus</li> </ul>	1500 V AC for 1 minute
Permissible potential difference	
between different circuits	750 V AC for 1 minute
Degree and class of protection	
Degree of protection acc. to EN 60529	
• IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
CSA approval	Yes
UL approval	Yes

cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
Marine approval	
Marine approval	Yes
Ambient conditions	
Free fall	
<ul> <li>Fall height, max.</li> </ul>	0.3 m; five times, in product package
Ambient temperature during operation	
<ul> <li>permissible temperature range</li> </ul>	-20 °C to +60 °C horizontal mounting, -20 °C to 50 °C vertical mounting, 95% humidity, non-condensing
• min.	-20 °C
● max.	60 °C; Number of simultaneously activated outputs: 8 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 16 at 55 °C horizontal or 45 °C vertical
<ul> <li>permissible temperature change</li> </ul>	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	
<ul> <li>Storage/transport, min.</li> </ul>	660 hPa
<ul> <li>Storage/transport, max.</li> </ul>	1 080 hPa
Relative humidity	
<ul> <li>permissible range (without condensation) at 25 °C</li> </ul>	95 %
Connection method	
required front connector	Yes
Mechanics/material	
Enclosure material (front)	
Plastic	Yes
Dimensions	
Width	70 mm
Height	100 mm
Depth	75 mm
Weights	
	350 g
Weight, approx.	550 g