



Figure similar

\*\*\*spare part\*\*\* SIPLUS S7-300 SM 321 20-pole based on 6ES7321-7BH01-0AB0 with conformal coating, -25...+70 °C, digital input isolated 16 DI; 24 V DC, 1x 20-pole, hardware interrupt, diagnostics, suitable for isochronous mode

General information	
based on	<a href="#">6ES7321-7BH01-0AB0</a>
Product function	
<ul style="list-style-type: none"> <li>• Isochronous mode</li> </ul>	Yes
Supply voltage	
Load voltage L+	
<ul style="list-style-type: none"> <li>• Rated value (DC)</li> </ul>	24 V
<ul style="list-style-type: none"> <li>• permissible range, lower limit (DC)</li> </ul>	20.4 V
<ul style="list-style-type: none"> <li>• permissible range, upper limit (DC)</li> </ul>	28.8 V
<ul style="list-style-type: none"> <li>• Reverse polarity protection</li> </ul>	Yes
Input current	
from load voltage L+ (without load), max.	90 mA
from backplane bus 5 V DC, max.	130 mA
Encoder supply	
Number of outputs	2
Type of output voltage	L+ (-2.5 V)
Short-circuit protection	Yes; Electronic
additional (redundant) feed	Yes
Output current	
<ul style="list-style-type: none"> <li>• Rated value</li> </ul>	120 mA
<ul style="list-style-type: none"> <li>• permissible range, lower limit</li> </ul>	0 mA
<ul style="list-style-type: none"> <li>• permissible range, upper limit</li> </ul>	150 mA
Power loss	
Power loss, typ.	4 W
Digital inputs	
Number of digital inputs	16
Input characteristic curve in accordance with IEC 61131, type 2	Yes
Number of simultaneously controllable inputs	
horizontal installation	
— up to 60 °C, max.	16
vertical installation	
— up to 40 °C, max.	16
Input voltage	
<ul style="list-style-type: none"> <li>• Type of input voltage</li> </ul>	DC
<ul style="list-style-type: none"> <li>• Rated value (DC)</li> </ul>	24 V
<ul style="list-style-type: none"> <li>• for signal "0"</li> </ul>	-30 to +5 V
<ul style="list-style-type: none"> <li>• for signal "1"</li> </ul>	13 to 30V
Input current	

• for signal "1", typ.	7 mA
<b>Input delay (for rated value of input voltage)</b>	
for standard inputs	
— parameterizable	Yes; 0.1 / 0.5 / 3 / 15 / 20 ms
<b>Encoder connection</b>	
• Fixed current limitation for wire-break monitoring, min.	10 kΩ
• Fixed current limitation for wire-break monitoring, max.	18 kΩ
<b>Cable length</b>	
• shielded, max.	1 000 m
• unshielded, max.	600 m
<b>Encoder</b>	
Connectable encoders	
• 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	2 mA
<b>Interrupts/diagnostics/status information</b>	
Alarms	Yes
Diagnostics function	Yes; Parameterizable
<b>Alarms</b>	
• Diagnostic alarm	Yes; Parameterizable
• Hardware interrupt	Yes; Parameterizable
<b>Diagnoses</b>	
• Diagnostic information readable	Yes
• Wire break	Yes; to I < 1 mA
<b>Diagnostics indication LED</b>	
• Group error SF (red)	Yes
• Status indicator digital input (green)	Yes
• Encoder supply Vs (green)	Yes
<b>Potential separation</b>	
Potential separation digital inputs	
• between the channels	No
• between the channels, in groups of	16
• between the channels and backplane bus	Yes; Optocoupler
<b>Isolation</b>	
Isolation tested with	500 V DC
<b>Standards, approvals, certificates</b>	
CE mark	Yes
UL approval	Yes; File E239877
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
<b>Railway application</b>	
• EN 50155	Yes; Sections 4, 5 and 12; no further agreements apply; T1, Category 1, Class A/B, EN 50155:2007 (see SIOS entry 109755985)
<b>Ambient conditions</b>	
Ambient temperature during operation	
• min.	-25 °C; = Tmin
• max.	70 °C; = Tmax; 60 °C @ UL/cUL, ATEX and FM use
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	5 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)
Relative humidity	
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
Use in stationary industrial systems	

- to biologically active substances according to EN 60721-3-3
- to chemically active substances according to EN 60721-3-3
- to mechanically active substances according to EN 60721-3-3

Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request  
 Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); \*  
 Yes; Class 3S4 incl. sand, dust, \*

**Use on land craft, rail vehicles and special-purpose vehicles**

- to biologically active substances according to EN 60721-3-5
- to chemically active substances according to EN 60721-3-5
- to mechanically active substances according to EN 60721-3-5

Yes; Class 5B2 mold, fungus and dry rot spores (with the exception of fauna); Class 5B3 on request  
 Yes; Class 5C3 (RH < 75 %) incl. salt spray acc. to EN 50155 (ST2); \*  
 Yes; Class 5S3 incl. sand, dust; \*

**Use on ships/at sea**

- to biologically active substances according to EN 60721-3-6
- to chemically active substances according to EN 60721-3-6
- to mechanically active substances according to EN 60721-3-6

Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request  
 Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); \*  
 Yes; Class 6S3 incl. sand, dust; \*

**Usage in industrial process technology**

- Against chemically active substances acc. to EN 60654-4
- Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04

Yes; Class 3 (excluding trichlorethylene)  
 Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)

**Remark**

- Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04

\* The supplied plug covers must remain in place over the unused interfaces during operation!

**Connection method**

required front connector 20-pin

**Dimensions**

Width 40 mm  
 Height 125 mm  
 Depth 120 mm

**Weights**

Weight, approx. 200 g

**Classifications**

	Version	Classification
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
IDEA	4	3566
UNSPSC	15	32-15-17-05

**Approvals / Certificates**

**General Product Approval**



[Manufacturer Declaration](#)

[Declaration of Conformity](#)



[China RoHS](#)





[CCC-Ex](#)

last modified:

5/29/2024