



Figure similar

SIPLUS S7-300 SM 321 based on 6ES7321-1CH20-0AA0 with conformal coating, -25...+70 °C, digital input isolated 16 DI, 48-125 V DC, 1x 20-pole

Supply voltage	
Load voltage L+	
• Rated value (DC)	48 V
• permissible range, lower limit (DC)	48 V
• permissible range, upper limit (DC)	125 V
Input current	
from backplane bus 5 V DC, max.	40 mA
Power loss	
Power loss, typ.	4.3 W
Digital inputs	
Number of digital inputs	16
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 60 °C, max.	8; 6 @ Ue 146 V
— up to 70 °C, max.	6; 4 @ Ue 146 V
horizontal installation	
— up to 50 °C, max.	8
— up to 60 °C, max.	8; 6 to Ue 146 V
Input voltage	
• Type of input voltage	DC
• Rated value (DC)	48 V; 48 V DC to 125 V DC
• for signal "0"	-146 V DC to +15 V DC
• for signal "1"	30 V DC to 146 V DC
Input current	
• for signal "1", typ.	3.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	No
— at "0" to "1", min.	0.1 ms
— at "0" to "1", max.	3.5 ms
— at "1" to "0", min.	0.7 ms
— at "1" to "0", max.	3 ms
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Encoder	

<b>Connectable encoders</b>	
<ul style="list-style-type: none"> <li>• 2-wire sensor <ul style="list-style-type: none"> <li>— permissible quiescent current (2-wire sensor), max.</li> </ul> </li> </ul>	<p>Yes</p> <p>1 mA</p>
<b>Interrupts/diagnostics/status information</b>	
Alarms	No
Diagnostics function	No
<b>Alarms</b>	
<ul style="list-style-type: none"> <li>• Diagnostic alarm</li> <li>• Hardware interrupt</li> </ul>	<p>No</p> <p>No</p>
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>• Group error SF (red)</li> <li>• Status indicator digital input (green)</li> </ul>	<p>No</p> <p>Yes</p>
<b>Potential separation</b>	
<b>Potential separation digital inputs</b>	
<ul style="list-style-type: none"> <li>• between the channels</li> <li>• between the channels, in groups of</li> <li>• between the channels and backplane bus</li> </ul>	<p>No</p> <p>8</p> <p>Yes; Optocoupler</p>
<b>Isolation</b>	
Isolation tested with	1 500 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>	
<ul style="list-style-type: none"> <li>• EN 50155</li> </ul>	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>	
<b>Ambient temperature during operation</b>	
<ul style="list-style-type: none"> <li>• min.</li> <li>• max.</li> </ul>	<p>-25 °C; = Tmin</p> <p>70 °C; = Tmax; for use on railway vehicles according to EN50155, the rated temperature range -25 ... +55 °C (T1) or 60 °C @ UL/ULhaz/ATEX/FM use applies</p>
<b>Ambient temperature during storage/transportation</b>	
<ul style="list-style-type: none"> <li>• min.</li> <li>• max.</li> </ul>	<p>-40 °C</p> <p>70 °C</p>
<b>Altitude during operation relating to sea level</b>	
<ul style="list-style-type: none"> <li>• Installation altitude above sea level, max.</li> <li>• Ambient air temperature-barometric pressure-altitude</li> </ul>	<p>2 000 m</p> <p>Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m)</p>
<b>Relative humidity</b>	
<ul style="list-style-type: none"> <li>• With condensation, tested in accordance with IEC 60068-2-38, max.</li> </ul>	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
<b>Resistance</b>	
<b>Use in stationary industrial systems</b>	
<ul style="list-style-type: none"> <li>— to biologically active substances according to EN 60721-3-3</li> <li>— to chemically active substances according to EN 60721-3-3</li> <li>— to mechanically active substances according to EN 60721-3-3</li> </ul>	<p>Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request</p> <p>Yes; Class 3C4 (RH &lt; 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *</p> <p>Yes; Class 3S4 incl. sand, dust, *</p>
<b>Use on land craft, rail vehicles and special-purpose vehicles</b>	
<ul style="list-style-type: none"> <li>— to biologically active substances according to EN 60721-3-5</li> <li>— to chemically active substances according to EN 60721-3-5</li> <li>— to mechanically active substances according to EN 60721-3-5</li> </ul>	<p>Yes; Class 5B2 mold, fungus and dry rot spores (with the exception of fauna); Class 5B3 on request</p> <p>Yes; Class 5C3 (RH &lt; 75 %) incl. salt spray acc. to EN 50155 (ST2); *</p> <p>Yes; Class 5S3 incl. sand, dust; *</p>
<b>Use on ships/at sea</b>	
<ul style="list-style-type: none"> <li>— to biologically active substances according to</li> </ul>	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on

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

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 / header**

required front connector 20-pin

**Dimensions**

Width 40 mm  
 Height 125 mm  
 Depth 120 mm

**Weights**

Weight, approx. 200 g

**last modified:** 12/18/2020 