



Figure similar

SIPLUS S7-300 SM 331 8AI 40-pole based on 6ES7331-7NF10-0AB0 with conformal coating, -25...+60 °C, analog input isolated, 8 AI; +/-5/10V, 1-5 V, +/-20 mA, 0/4 to 20 mA, 16-bit, single rooting (60 V COM.), 4-channel operation: 10 ms, 8-channel operation: 23-95 ms, 1x 40-pole

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>Reverse polarity protection</li> </ul>	Yes
Input current	
from load voltage L+ (without load), max.	200 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	3 W
Analog inputs	
Number of analog inputs	8
permissible input voltage for voltage input (destruction limit), max.	75 V; 35 V continuous, 75 V for max. 1 s (mark to space ratio 1:20)
permissible input current for current input (destruction limit), max.	40 mA
Input ranges	
<ul style="list-style-type: none"> <li>Voltage</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Current</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Thermocouple</li> </ul>	No
<ul style="list-style-type: none"> <li>Resistance thermometer</li> </ul>	No
<ul style="list-style-type: none"> <li>Resistance</li> </ul>	No
Input ranges (rated values), voltages	
<ul style="list-style-type: none"> <li>0 to +10 V</li> </ul>	No
<ul style="list-style-type: none"> <li>1 V to 5 V</li> </ul>	Yes
<ul style="list-style-type: none"> <li>— Input resistance (1 V to 5 V)</li> </ul>	10 MΩ
<ul style="list-style-type: none"> <li>1 V to 10 V</li> </ul>	No
<ul style="list-style-type: none"> <li>-1 V to +1 V</li> </ul>	No
<ul style="list-style-type: none"> <li>-10 V to +10 V</li> </ul>	Yes
<ul style="list-style-type: none"> <li>— Input resistance (-10 V to +10 V)</li> </ul>	10 MΩ
<ul style="list-style-type: none"> <li>-2.5 V to +2.5 V</li> </ul>	No
<ul style="list-style-type: none"> <li>-250 mV to +250 mV</li> </ul>	No
<ul style="list-style-type: none"> <li>-5 V to +5 V</li> </ul>	Yes
<ul style="list-style-type: none"> <li>— Input resistance (-5 V to +5 V)</li> </ul>	10 MΩ
<ul style="list-style-type: none"> <li>-50 mV to +50 mV</li> </ul>	No
<ul style="list-style-type: none"> <li>-500 mV to +500 mV</li> </ul>	No
<ul style="list-style-type: none"> <li>-80 mV to +80 mV</li> </ul>	No
Input ranges (rated values), currents	
<ul style="list-style-type: none"> <li>0 to 20 mA</li> </ul>	Yes
<ul style="list-style-type: none"> <li>— Input resistance (0 to 20 mA)</li> </ul>	250 Ω

<ul style="list-style-type: none"> <li>• -20 mA to +20 mA <ul style="list-style-type: none"> <li>— Input resistance (-20 mA to +20 mA)</li> </ul> </li> <li>• -3.2 mA to +3.2 mA</li> <li>• 4 mA to 20 mA <ul style="list-style-type: none"> <li>— Input resistance (4 mA to 20 mA)</li> </ul> </li> </ul>	<p>Yes 250 Ω No Yes 250 Ω</p>
<b>Input ranges (rated values), thermocouples</b>	
<ul style="list-style-type: none"> <li>• Type B</li> <li>• Type C</li> <li>• Type E</li> <li>• Type J</li> <li>• Type K</li> <li>• Type L</li> <li>• Type N</li> <li>• Type R</li> <li>• Type S</li> <li>• Type T</li> <li>• Type U</li> <li>• Type TXK/TXK(L) to GOST</li> </ul>	<p>No No No No No No No No No No No No</p>
<b>Input ranges (rated values), resistance thermometer</b>	
<ul style="list-style-type: none"> <li>• Cu 10</li> <li>• Ni 100</li> <li>• Ni 1000</li> <li>• LG-Ni 1000</li> <li>• Ni 120</li> <li>• Ni 200</li> <li>• Ni 500</li> <li>• Pt 100</li> <li>• Pt 1000</li> <li>• Pt 200</li> <li>• Pt 500</li> </ul>	<p>No No No No No No No No No No No</p>
<b>Input ranges (rated values), resistors</b>	
<ul style="list-style-type: none"> <li>• 0 to 150 ohms</li> <li>• 0 to 300 ohms</li> <li>• 0 to 600 ohms</li> <li>• 0 to 6000 ohms</li> </ul>	<p>No No No No</p>
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>• shielded, max.</li> </ul>	<p>200 m</p>
<b>Analog value generation for the inputs</b>	
<b>Integration and conversion time/resolution per channel</b>	
<ul style="list-style-type: none"> <li>• Resolution with overrange (bit including sign), max.</li> <li>• Integration time, parameterizable</li> <li>• Basic conversion time (ms)</li> <li>• Interference voltage suppression for interference frequency f1 in Hz</li> </ul>	<p>16 bit; Unipolar: 15/15/15/15 bit; bipolar: 15 bit + sign/15 bit + sign/15 bit + sign/15 bit + sign Yes; 23 / 72 / 83 / 95 ms 10 ms (4-channel mode); 95/83/72/23 ms (8-channel mode) 400 / 60 / 50 Hz, combinations of 400, 60, 50 Hz</p>
<b>Encoder</b>	
<b>Connection of signal encoders</b>	
<ul style="list-style-type: none"> <li>• for voltage measurement</li> <li>• for current measurement as 2-wire transducer</li> <li>• for current measurement as 4-wire transducer</li> </ul>	<p>Yes Yes; with external transmitter, current supply; possible with separate supply for transmitter Yes</p>
<b>Errors/accuracies</b>	
<b>Operational error limit in overall temperature range</b>	
<ul style="list-style-type: none"> <li>• Voltage, relative to input range, (+/-)</li> <li>• Current, relative to input range, (+/-)</li> </ul>	<p>0.1 %; @ 0 ... +60 °C; ±0.2% @ -25 ... +60 °C 0.1 %; @ 0 ... +60 °C; ±0.2% @ -25 ... +60 °C</p>
<b>Basic error limit (operational limit at 25 °C)</b>	
<ul style="list-style-type: none"> <li>• Voltage, relative to input range, (+/-)</li> <li>• Current, relative to input range, (+/-)</li> </ul>	<p>0.05 % 0.05 %</p>
<b>Interrupts/diagnostics/status information</b>	
<ul style="list-style-type: none"> <li>• Diagnostics function</li> </ul>	<p>Yes; Parameterizable</p>

<b>Alarms</b>	
<ul style="list-style-type: none"> <li>• Diagnostic alarm</li> <li>• Limit value alarm</li> </ul>	Yes; Parameterizable
<ul style="list-style-type: none"> <li>• Hardware interrupt</li> </ul>	Yes; Parameterizable all channels (end of cycle interrupt is also supported across modules)
<b>Diagnoses</b>	
<ul style="list-style-type: none"> <li>• Diagnostic information readable</li> </ul>	Yes
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>• Group error SF (red)</li> </ul>	Yes
<b>Potential separation</b>	
<b>Potential separation analog inputs</b>	
<ul style="list-style-type: none"> <li>• between the channels</li> </ul>	No
<ul style="list-style-type: none"> <li>• between the channels, in groups of</li> </ul>	2
<ul style="list-style-type: none"> <li>• between the channels and backplane bus</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• between the channels and the power supply of the electronics</li> </ul>	Yes
<b>Isolation</b>	
Isolation tested with	500 V AC
<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 50121-4</li> </ul>	No
<ul style="list-style-type: none"> <li>• EN 50155</li> </ul>	No
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
<ul style="list-style-type: none"> <li>• min.</li> </ul>	-25 °C; = Tmin
<ul style="list-style-type: none"> <li>• max.</li> </ul>	60 °C; = Tmax
<b>Ambient temperature during storage/transportation</b>	
<ul style="list-style-type: none"> <li>• min.</li> </ul>	-40 °C
<ul style="list-style-type: none"> <li>• max.</li> </ul>	70 °C
<b>Altitude during operation relating to sea level</b>	
<ul style="list-style-type: none"> <li>• Installation altitude above sea level, max.</li> </ul>	5 000 m
<ul style="list-style-type: none"> <li>• Ambient air temperature-barometric pressure-altitude</li> </ul>	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)
<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> </ul>	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
<ul style="list-style-type: none"> <li>— to chemically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
<ul style="list-style-type: none"> <li>— to mechanically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3S4 incl. sand, dust, *
<b>Use on ships/at sea</b>	
<ul style="list-style-type: none"> <li>— to biologically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
<ul style="list-style-type: none"> <li>— to chemically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
<ul style="list-style-type: none"> <li>— to mechanically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6S3 incl. sand, dust; *
<b>Usage in industrial process technology</b>	
<ul style="list-style-type: none"> <li>— Against chemically active substances acc. to EN 60654-4</li> </ul>	Yes; Class 3 (excluding trichlorethylene)
<ul style="list-style-type: none"> <li>— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-</li> </ul>	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible);

71.04	level LC3 (salt spray) and level LB3 (oil)
<b>Remark</b>	
— 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!
<b>connection method / header</b>	
required front connector	40-pin
<b>Dimensions</b>	
Width	40 mm
Height	125 mm
Depth	120 mm
<b>Weights</b>	
Weight, approx.	272 g
<b>last modified:</b>	1/16/2021 