



Figure similar

SIMATIC S7-300, Analog input SM 331, isolated, 8 AI, resolution 14 bit, 0.052 ms/channel current, Voltage alarm, diagnostics, 1x 20-pole, suitable for isochronous mode Improved bus cycle time for isochronous mode

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.	50 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	1.5 W
Analog inputs	
Number of analog inputs	8
permissible input voltage for voltage input (destruction limit), max.	20 V; 20 V DC permanent, 75 V DC for max. 1 s (duty factor 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                             <ul style="list-style-type: none"> <li>— Input resistance (1 V to 5 V)</li> </ul> </li> </ul>	Yes 100 kΩ
<ul style="list-style-type: none"> <li>-1 V to +1 V                             <ul style="list-style-type: none"> <li>— Input resistance (-1 V to +1 V)</li> </ul> </li> </ul>	Yes 10 MΩ
<ul style="list-style-type: none"> <li>-10 V to +10 V                             <ul style="list-style-type: none"> <li>— Input resistance (-10 V to +10 V)</li> </ul> </li> </ul>	Yes 100 kΩ
<ul style="list-style-type: none"> <li>-5 V to +5 V                             <ul style="list-style-type: none"> <li>— Input resistance (-5 V to +5 V)</li> </ul> </li> </ul>	Yes 100 kΩ
<ul style="list-style-type: none"> <li>-500 mV to +500 mV</li> </ul>	Yes
<ul style="list-style-type: none"> <li>-80 mV to +80 mV</li> </ul>	Yes
Input ranges (rated values), currents	
<ul style="list-style-type: none"> <li>0 to 20 mA                             <ul style="list-style-type: none"> <li>— Input resistance (0 to 20 mA)</li> </ul> </li> </ul>	Yes 50 Ω
<ul style="list-style-type: none"> <li>-20 mA to +20 mA</li> </ul>	Yes

— Input resistance (-20 mA to +20 mA)	50 Ω
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	50 Ω
<b>Cable length</b>	
• shielded, max.	200 m
<b>Analog value generation for the inputs</b>	
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	14 bit; Unipolar: 14 bit; bipolar: 13 bit + sign
• Integration time, parameterizable	Yes
• Basic conversion time (ms)	52 μs per channel
• Interference voltage suppression for interference frequency f1 in Hz	none / 400 / 60 / 50 Hz
<b>Encoder</b>	
<b>Connection of signal encoders</b>	
• for current measurement as 2-wire transducer	Yes
• for current measurement as 4-wire transducer	Yes
<b>Errors/accuracies</b>	
<b>Operational error limit in overall temperature range</b>	
• Voltage, relative to input range, (+/-)	0.4 %
• Current, relative to input range, (+/-)	0.3 %
<b>Basic error limit (operational limit at 25 °C)</b>	
• Voltage, relative to input range, (+/-)	0.25 %
• Current, relative to input range, (+/-)	0.2 %
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes; Parameterizable
• Limit value alarm	Yes; Parameterizable, channels 0 and 2
<b>Diagnoses</b>	
• Diagnostic information readable	Yes
<b>Diagnostics indication LED</b>	
• Group error SF (red)	Yes
<b>Potential separation</b>	
<b>Potential separation analog inputs</b>	
• between the channels	No
• between the channels and backplane bus	Yes
• between the channels and the power supply of the electronics	Yes
<b>Isolation</b>	
Isolation tested with	500 V DC
<b>Connection method</b>	
required front connector	20-pin
<b>Dimensions</b>	
Width	40 mm
Height	125 mm
Depth	117 mm
<b>Weights</b>	
Weight, approx.	230 g
<b>last modified:</b>	12/19/2020 