



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"> Rated value (DC) 	24 V
<ul style="list-style-type: none"> Reverse polarity protection 	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"> Voltage 	Yes
<ul style="list-style-type: none"> Current 	Yes
<ul style="list-style-type: none"> Thermocouple 	No
<ul style="list-style-type: none"> Resistance thermometer 	No
<ul style="list-style-type: none"> Resistance 	No
Input ranges (rated values), voltages	
<ul style="list-style-type: none"> 0 to +10 V 	No
<ul style="list-style-type: none"> 1 V to 5 V 	Yes
<ul style="list-style-type: none"> — Input resistance (1 V to 5 V) 	100 kΩ
<ul style="list-style-type: none"> -1 V to +1 V 	Yes
<ul style="list-style-type: none"> — Input resistance (-1 V to +1 V) 	10 MΩ
<ul style="list-style-type: none"> -10 V to +10 V 	Yes
<ul style="list-style-type: none"> — Input resistance (-10 V to +10 V) 	100 kΩ
<ul style="list-style-type: none"> -5 V to +5 V 	Yes
<ul style="list-style-type: none"> — Input resistance (-5 V to +5 V) 	100 kΩ
<ul style="list-style-type: none"> -500 mV to +500 mV 	Yes
<ul style="list-style-type: none"> -80 mV to +80 mV 	Yes
Input ranges (rated values), currents	
<ul style="list-style-type: none"> 0 to 20 mA 	Yes
<ul style="list-style-type: none"> — Input resistance (0 to 20 mA) 	50 Ω
<ul style="list-style-type: none"> -20 mA to +20 mA 	Yes
<ul style="list-style-type: none"> — Input resistance (-20 mA to +20 mA) 	50 Ω
<ul style="list-style-type: none"> 4 mA to 20 mA 	Yes

— Input resistance (4 mA to 20 mA)	50 Ω
Cable length	
• shielded, max.	200 m
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
• 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
Encoder	
Connection of signal encoders	
• for current measurement as 2-wire transducer	Yes
• for current measurement as 4-wire transducer	Yes
Errors/accuracies	
Operational error limit in overall temperature range	
• Voltage, relative to input range, (+/-)	0.4 %
• Current, relative to input range, (+/-)	0.3 %
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to input range, (+/-)	0.25 %
• Current, relative to input range, (+/-)	0.2 %
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
• Diagnostic alarm	Yes; Parameterizable
• Limit value alarm	Yes; Parameterizable, channels 0 and 2
Diagnoses	
• Diagnostic information readable	Yes
Diagnostics indication LED	
• Group error SF (red)	Yes
Potential separation	
Potential separation analog inputs	
• between the channels	No
• between the channels and backplane bus	Yes
• between the channels and the power supply of the electronics	Yes
Isolation	
Isolation tested with	500 V DC
connection method / header	
required front connector	20-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	117 mm
Weights	
Weight, approx.	230 g
last modified:	12/19/2020 