



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+	
• Rated value (DC)	24 V
• 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	
• Voltage	Yes
• Current	Yes
• Thermocouple	No
• Resistance thermometer	No
• Resistance	No
Input ranges (rated values), voltages	
• 0 to +10 V	No
• 1 V to 5 V	Yes
— Input resistance (1 V to 5 V)	100 kΩ
• -1 V to +1 V	Yes
— Input resistance (-1 V to +1 V)	10 MΩ
• -10 V to +10 V	Yes
— Input resistance (-10 V to +10 V)	100 kΩ
• -5 V to +5 V	Yes
— Input resistance (-5 V to +5 V)	100 kΩ
• -500 mV to +500 mV	Yes
• -80 mV to +80 mV	Yes
Input ranges (rated values), currents	
• 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	50 Ω
• -20 mA to +20 mA	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

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. - Integration time, parameterizable - Basic conversion time (ms) - Interference voltage suppression for interference frequency f1 in Hz	14 bit; Unipolar: 14 bit; bipolar: 13 bit + sign Yes 52 µs per channel none / 400 / 60 / 50 Hz		
Encoder			
Connection of signal encoders			
- for current measurement as 2-wire transducer - for current measurement as 4-wire transducer	Yes Yes		
Errors/accuracies			
Operational error limit in overall temperature range			
- Voltage, relative to input range, (+/-) - Current, relative to input range, (+/-)	0.4 % 0.3 %		
Basic error limit (operational limit at 25 °C)			
- Voltage, relative to input range, (+/-) - Current, relative to input range, (+/-)	0.25 % 0.2 %		
Interrupts/diagnostics/status information			
Diagnostics function	Yes		
Alarms			
- Diagnostic alarm - Limit value alarm	Yes; Parameterizable 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 - between the channels and backplane bus - between the channels and the power supply of the electronics	No Yes Yes		
Isolation			
Isolation tested with	500 V DC		
connection method			
required front connector	20-pin		
Dimensions			
Width	40 mm		
Height	125 mm		
Depth	117 mm		
Weights			
Weight, approx.	230 g		
Classifications			
		Version	Classification
	eClass	14	27-24-22-01
	eClass	12	27-24-22-01
	eClass	9.1	27-24-22-01
	eClass	9	27-24-22-01
	eClass	8	27-24-22-01
	eClass	7.1	27-24-22-01
	eClass	6	27-24-22-01
	ETIM	9	EC001420
	ETIM	8	EC001420
	ETIM	7	EC001420
	IDEA	4	3562

Approvals / Certificates

General Product Approval

[Miscellaneous](#)[Manufacturer Declaration](#)[Metrological Approval](#)

General Product Approval

EMV

For use in hazardous locations

[EM](#)

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