

Data sheet

6ES7331-7HF01-0AB0



Figure similar

spare part 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

General information	
Product function	
• Isochronous mode	Yes
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.	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		
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	10	EC001420
ETIM	9	EC001420
ETIM	8	EC001420
ETIM	7	EC001420
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval



[Miscellaneous](#)



[Metrological Approval](#)



General Product Approval | EMV



[China RoHS](#)

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For use in hazardous locations



[EM](#)



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