SIEMENS

Data sheet

6ES7331-7NF10-0AB0



SIMATIC S7-300, Analog input SM 331, isolated, 8 AI; \pm -5/10V, 1-5 V, \pm 20 mA, 0/4 to 20 mA, 16 bit, Single rooting (60 V COM.), 4-channel operation: 10 ms, 8-channel operation: 23-95ms, 1x 40-pole

Figure similar

Supply voltage	
Load voltage L+	
Rated value (DC)	24 V
Reverse polarity protection	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	
 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)	10 ΜΩ
• 1 V to 10 V	No
• -1 V to +1 V	No
• -10 V to +10 V	Yes
— Input resistance (-10 V to +10 V)	10 ΜΩ
• -2.5 V to +2.5 V	No
• -250 mV to +250 mV	No
• -5 V to +5 V	Yes
— Input resistance (-5 V to +5 V)	10 ΜΩ
• -50 mV to +50 mV	No
• -500 mV to +500 mV	No
• -80 mV to +80 mV	No
Input ranges (rated values), currents	
• 0 to 20 mA	Yes
 — Input resistance (0 to 20 mA) 	250 Ω

- 20 mA to +20 mA to -20	• -10 mA to +10 mA	No
Input resistance (-20 mA to +20 mA)		
3.2 m A to - 9.2 m A		
- Input resistance (4 mA to 20 mA) 1 ype E 1 ype E 1 ype E 1 ype E 1 ype I 1		
input ranges (rated values), thermocouples • Type B • Type C • Type C • Type I • Type I • Type L • Type L • Type N • Type R • Type N • Type R • Type S • Type TXMTXK(L) to GOST • No • No • Type TXMTXK(L) to GOST • No • No • Type TXMTXK(L) to GOST • No • Pricon • No • No • No • Pricon • No • Oto 600 othms • No • Oto 600 othms • Shelded, max. Analog value generation for the Inputs * Integration and conversion time (ms) • Integration with overrangle tin chuding sign), max. • Integration with overrangle til including sign), max. • Integration with overrangle til including sign), max. • Integration with overrangle til including sign), max. • Integration and conversion time (ms) • Interference voltage suppression for interference • Resolution with overrangle til including sign), max. • Integration with overrangle til including sign), max. • Integration with overrangle til including sign), max. • Integration and conversion time (ms) • Interference voltage suppression for interference • For current measurement as 2-wire transducer • Ves with external transmitter, current supply, possible		
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• Type I • Type J • Type I • Type K • Type K • Type N • Type N • Type N • Type S • Type S • Type S • Type I •		
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	• Ni 100	No
Ni 120 Ni 200 Ni 200 Ni 200 Ni 200 Ni 200 Ni 200 Pt 100 No Pt 100 No Pt 200 No Pt 200 No Pt 500 No No O to 150 ohms No 0 to 600 ohms No 0 to 6000 ohms No O to 6000 ohms No O to 6000 ohms No O to 6000 ohms No No Inbegration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Integration time, parameterizable Resolution with overrange (bit including sign), max. Integration time, parameterizable Pasic conversion time (ms) Interference voltage suppression for interference frequency 11 in Hz Encoder Connection of signal encoders for outrage measurement for current measurement as 4-wire transducer for outrage measurement for outrage measurement for outrant measurement as 4-wire transducer for current measurement in overall temperature range voltage, relative to input range, (+/-) voltage, relative to	• Ni 1000	No
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supply for transmitter • for current measurement as 4-wire transducer Errors/accuracies Operational error limit in overall temperature range • Voltage, relative to input range, (+/-) • Current, relative to input range, (+/-) Basic error limit (operational limit at 25 °C) • Voltage, relative to input range, (+/-) • Current, relative to input range, (+/-) • O.05 % • Current, relative to input range, (+/-) • O.05 %		
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• Current, relative to input range, (+/-) 0.05 %		
Interrupts/diagnostics/status information		0.05 %
	Interrupts/diagnostics/status information	

Diagnostics function	Yes; Parameterizable
Alarms	
Diagnostic alarm	Yes; Parameterizable
Limit value alarm	Yes; Parameterizable all channels (end of cycle interrupt is also supported across modules)
Hardware interrupt	Yes; Parameterizable, channels 0 to 7 (on exceeding limit value), at end of cycle
Diagnoses	
Diagnostic information readable	Yes
Diagnostics indication LED	
 Group error SF (red) 	Yes
Potential separation	
Potential separation analog inputs	
 between the channels 	Yes
 between the channels, in groups of 	2
 between the channels and backplane bus 	Yes
 between the channels and the power supply of the electronics 	Yes
Isolation	
Isolation tested with	500 V AC
connection method / header	
required front connector	40-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	117 mm
Weights	
Weight, approx.	272 g
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