SIEMENS

Data sheet

6ES7331-7PF01-0AB0



SIMATIC S7-300, Analog input SM 331, isolated, 2/3/4-wire, 8 AI, Resistor, Pt100/200/1000 NI100/120/200/500/1000, CU10, characteristics according to GOST 16 (internal 24) bit, 50ms, 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.	240 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	4.6 W
Analog inputs	
Number of analog inputs	8
 For resistance measurement 	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)
Input ranges	
Voltage	No
Current	No
Thermocouple	No
 Resistance thermometer 	Yes
Resistance	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	No
• 1 V to 5 V	No
• 1 V to 10 V	No
• -1 V to +1 V	No
• -10 V to +10 V	No
• -2.5 V to +2.5 V	No
• -250 mV to +250 mV	No
• -5 V to +5 V	No
• -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	No
• -10 mA to +10 mA	No
• -20 mA to +20 mA	No
• -3.2 mA to +3.2 mA	No
• 4 mA to 20 mA	No

Input ranges (rated values), thermocouples	
Type B	No
• Type C	No
• Type C	No
• Type J	No
• Type K	No
• Type L	No
• Type N	No
• Type R	No
• Type S	No
• Type T	No
• Type U	No
Type TXK/TXK(L) to GOST	No
Input ranges (rated values), resistance thermometer	
• Cu 10	Yes
• Ni 100	Yes
• Ni 1000	Yes
• LG-Ni 1000	Yes
• Ni 120	Yes
• Ni 200	Yes
• Ni 500	Yes
• Pt 100	Yes
• Pt 1000	Yes
• Pt 200	Yes
● Pt 500	Yes
Input ranges (rated values), resistors	
• 0 to 150 ohms	Yes
• 0 to 300 ohms	Yes
• 0 to 600 ohms	Yes
Characteristic linearization	
• parameterizable	Yes
— for resistance thermometer	Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni200, Ni500, Ni1000, Cu10; (standard/climate)
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. 	16 bit; Two's complement
 Integration time, parameterizable 	Yes
 Basic conversion time (ms) 	up to 4 channels: 10 ms per module, over 5 channels: 190 ms per
Interference voltage aumproceion for interference	module, 8 channels: 80 ms 400 / 60 / 50 Hz
 Interference voltage suppression for interference frequency f1 in Hz 	400 / 00 / 30 FIZ
Encoder	
Connection of signal encoders	
for resistance measurement with two-wire connection	Yes; without resistance correction
 for resistance measurement with three-wire connection 	Yes
 for resistance measurement with four-wire connection 	Yes
Errors/accuracies	
Operational error limit in overall temperature range	
• Resistance, relative to input range, (+/-)	0.1 %
• Resistance thermometer, relative to input range, (+/-)	±1 K
Basic error limit (operational limit at 25 °C)	
 Resistance, relative to input range, (+/-) 	0.05 %
 Resistance thermometer, relative to input range, (+/-) 	±0.5 K
Interrupts/diagnostics/status information	

Alarms Diagnostic alarm Limit value alarm Hardware interrupt Ves; Parameterizable Hardware interrupt Ves; Parameterizable, channels 0 to 7 Diagnoses Diagnostic information readable Ves Diagnostics indication LED Group error SF (red) Potential separation Potential separation analog inputs between the channels Yes
 Limit value alarm Hardware interrupt Parameterizable, channels 0 to 7 Diagnoses Diagnostic information readable Diagnostics indication LED Group error SF (red) Potential separation Potential separation analog inputs
 Hardware interrupt Yes; Parameterizable, channels 0 to 7 Diagnoses Diagnostic information readable Yes Diagnostics indication LED Group error SF (red) Yes Potential separation Potential separation analog inputs
Diagnoses Diagnostic information readable Yes Diagnostics indication LED Group error SF (red) Potential separation Potential separation analog inputs
Diagnostic information readable Ves Diagnostics indication LED Group error SF (red) Potential separation Potential separation analog inputs
Diagnostics indication LED ◆ Group error SF (red) Potential separation Potential separation analog inputs
Group error SF (red) Potential separation Potential separation analog inputs
Potential separation Potential separation analog inputs
Potential separation analog inputs
a hatuaan tha channala
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 DC
connection method / header
required front connector 40-pin
Dimensions
Width 40 mm
Height 125 mm
Depth 120 mm
Weights
Weight, approx. 272 g

1/16/2021 🗗

last modified: