SIEMENS

Data sheet 6ES7331-7PF01-0AB0

Figure similar

spare part SIMATIC S7-300, analog input SM 331, isolated, 2/3/4-wire, 8 AI, resistor, Pt100/200/1000 NI100/120/200/500/1000, CU10, characteristic curves according to GOST 16 (internal 24) bit, 50 ms, 1x 40-pole

General information	
Product function	
● Isochronous mode	No
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

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● -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 E	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 module, 8 channels: 80 ms
● Interference voltage suppression for interference frequency f1 in Hz	400 / 60 / 50 Hz
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	
Diagnostics function	Yes; Parameterizable

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Alarms	
● Diagnostic alarm	Yes; Parameterizable per group
● Limit value alarm	Yes; Parameterizable
● 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	
● 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	
required front connector	40-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	272 g

Classifications

	Version	Classification
eClass	16	27-24-22-01
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 | Manufacturer Declaration | Metrological Approval

General Product Approval

Manufacturer Declaration | China RoHS

EMV

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EMV	For use in hazardous locations				
RCM	ATEX	FM	IECEx	ATEX	Miscellaneous

For use in hazardous locations	Maritime application				
CCC-Ex	ABS	DNV	LRS	NK / Nippon Kaiji Kyokai	PRS

Maritime application	
RINA	CCS (China Classification Society)

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