SIEMENS

Data sheet 6ES7431-7KF10-0AB0



Figure similar

SIMATIC S7-400, analog input SM 431, 8 AI, resolution 16 bit, resistor/PT100/NI100 isolated, diagnostics alarm, 20 ms conversion time

Input current	
from backplane bus 5 V DC, max.	650 mA
Power loss	
Power loss, typ.	3.3 W
Analog inputs	
Number of analog inputs	8
● For resistance measurement	8
permissible input voltage for voltage input (destruction limit), max.	35 V; 35 V continuous, 75 V for max. 1 s (mark to space ratio 1:20)
Constant measurement current for resistance-type transmitter, typ.	1 mA
Input ranges	
● Voltage	No
● Current	No
● Thermocouple	No
● Resistance thermometer	Yes
● Resistance	Yes
Input ranges (rated values), resistance thermometer	
● Ni 100	Yes
— Input resistance (Ni 100)	> 10 000 ohms
● Ni 1000	Yes; Different characteristics selectable: Europe/U.S.
— Input resistance (Ni 1000)	> 10 000 ohms
● Pt 100	Yes
— Input resistance (Pt 100)	> 10 000 ohms
● Pt 1000	Yes
— Input resistance (Pt 1000)	> 10 000 ohms
● Pt 200	Yes
— Input resistance (Pt 200)	> 10 000 ohms
● Pt 500	Yes
— Input resistance (Pt 500)	> 10 000 ohms
Characteristic linearization	
● Parameterizable	Yes
— for resistance thermometer	Pt100, Pt200, Pt500, Pt1000, Ni100, Ni1000; different characteristics selectable (Europe/U.S.)
Cable length	
● shielded, max.	200 m; 50 m with thermocouples and input ranges ±80 mV
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
● Resolution with overrange (bit including sign), max.	16 bit

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● Integration time, parameterizable	Yes
● Basic conversion time (ms)	8 / 23 / 25 ms
● Integration time (ms)	20 ms at 50 Hz (entire module incl. wire break)
● Interference voltage suppression for interference frequency f1 in Hz	none/ 60 / 50 Hz
● Basic execution time of the module (all channels released)	8 ms; 8 / 23 / 25 ms
Encoder	
Connection of signal encoders	
● 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 thermometer, relative to input range, (+/-)	±1 °C
Basic error limit (operational limit at 25 °C)	
● Resistance thermometer, relative to input range, (+/-)	±0,2 °C
Interrupts/diagnostics/status information	
Diagnostics function	Yes; Parameterizable
Alarms	
● Diagnostic alarm	Yes; Parameterizable
● Limit value alarm	Yes
● Hardware interrupt	Yes; Parameterizable
Diagnoses	
● Diagnostic information readable	Yes; possible
Potential separation	
Potential separation analog inputs	
● Potential separation analog inputs	Yes; internal/external
● between the channels	No
● between the channels and backplane bus	Yes
Isolation	
Isolation tested with	500 V DC
Dimensions	
Width	25 mm
Height	290 mm
Depth	210 mm
Weights	
Weight, approx.	650 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

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EG-Konf.	Manufacturer Declaration	Miscellaneous	UKCA	UL	Metrological Approval

General Product Approval					EMV
	RCM	China RoHS	Miscellaneous	Manufacturer Declaration	RCM

EMV	For use in hazardous locations				
RCM	ATEX	FM	CCC	UL	IECEx

For use in hazardous locations		Maritime application			
Type Examination Certificate	ATEX	ABS	BUREAU VERITAS	DNV	LRS

Maritime application				
NK / Nippon Kaiji Kyokai	PRS	RINA	RMRS	CCS (China Classification Society)

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