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

© Copyright Plcally

● 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

© Copyright Plcally

Manufacturer Declaration | Miscellaneous | Metrological Approval

General Product Approval | **EMV**

China RoHS | Miscellaneous | Manufacturer Declaration

EMV | **For use in hazardous locations**

FM

For use in hazardous locations | **Maritime application**

Type Examination Certificate

Maritime application

NK / Nippon Kaiji Kyokai | CCS (China Classification Society)

last modified: 6/7/2025

© Copyright Plcally