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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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)

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