

Siemens 6ES7431-7KF10-0AB0 Manual

Brand	Siemens
Product Series	Siemens
Product Type	transmitter,

Description

6ES7431-7KF10-0AB0

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
- 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, (+/-) $\pm 0,2$ °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

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