

Siemens 6ES7431-7KF00-0AB0 Manual

Brand	Siemens
Product Series	Siemens
Product Type	B Yes

Description

6ES7431-7KF00-0AB0

SIMATIC S7-400, analog input SM 431, 8 AI, resolution 16 bit, U/I/Thermocouple, isolated with single rooting, diagnostics, alarm, 20 ms conversion time

Input current

from backplane bus 5 V DC, max. 1 200 mA

Power loss

Power loss, typ. 4.6 W

Analog inputs

Number of analog inputs 8

- For voltage/current 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)

permissible input current for current input (destruction limit), max.

32 mA

Input ranges

- Voltage Yes
- Current Yes
- Thermocouple Yes
- Resistance thermometer No
- Resistance No

Input ranges (rated values), voltages

- 1 V to 5 V Yes

— Input resistance (1 V to 5 V) > 2 000 ohms

- -1 V to +1 V Yes
- -10 V to +10 V Yes
- -100 mV to +100 mV Yes
- -2.5 V to +2.5 V Yes
- -20 mV to +20 mV Yes
- -250 mV to +250 mV Yes
- -5 V to +5 V Yes
- -50 mV to +50 mV Yes
- -500 mV to +500 mV Yes
- -80 mV to +80 mV Yes

Input ranges (rated values), currents

- 0 to 20 mA Yes
- -10 mA to +10 mA Yes

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- -20 mA to +20 mA Yes
- -3.2 mA to +3.2 mA Yes
- 4 mA to 20 mA Yes

— Input resistance (4 mA to 20 mA) 50 Ω

- -5 mA to +5 mA Yes

Input ranges (rated values), thermocouples

- Type B Yes

— Input resistance (Type B) > 2 000 ohms

- Type E Yes
- Type J Yes
- Type K Yes
- Type L Yes
- Type N Yes

— Input resistance (Type N) > 2 000 ohms

- Type R Yes
- Type S Yes
- Type T Yes
- Type U Yes

Thermocouple (TC)

Temperature compensation

— connection for compensating the cold junction 6ES7431-7KF00-6AA0

— parameterizable Yes

— internal temperature compensation Yes

— external temperature compensation with compensations socket

Yes

— dynamic reference temperature value Yes

Characteristic linearization

- parameterizable Yes

— for thermocouples Type B, E, J, K, L, N, R, S, T, U

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
- Integration time, parameterizable Yes
- Basic conversion time (ms) 10 / 16,7 / 20 / 100
- Integration time (ms) 2,5 / 16,7 / 20 / 100
- Interference voltage suppression for interference

frequency f1 in Hz

400 / 60 / 50 / 10 Hz

Encoder

Connection of signal encoders

- for voltage measurement Yes; possible
- for current measurement as 4-wire transducer Yes
- for resistance measurement with four-wire connection Yes

Errors/accuracies

Operational error limit in overall temperature range

- Voltage, relative to input range, (+/-) 0.3 %
- Current, relative to input range, (+/-) 0.5 %

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Basic error limit (operational limit at 25 °C)

- Voltage, relative to input range, (+/-) 0.1 %
- Current, relative to input range, (+/-) 0.17 %

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 Yes
- between the channels and backplane bus Yes

Isolation

Isolation tested with 1 500 V DC

Dimensions

Width 25 mm

Height 290 mm

Depth 210 mm

Weights

Weight, approx. 650 g

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