

Siemens 6ES7431-0HH00-0AB0 Manual

Brand	Siemens
Product Series	Siemens
Product Type	transmitter,

Description

6ES7431-0HH00-0AB0

SIMATIC S7-400, analog input SM 431, non-isolated 16 AI, resolution 13 bit, +/-10

V, +/-20 mA, 4 - 20 mA 20 ms conversion time

Supply voltage

Load voltage L+

- Rated value (DC) 24 V; Only required for supplying 2-wire transmitters
- Reverse polarity protection Yes

Input current

from load voltage L+ (without load), max. 400 mA; for 16 connected, fully controlled 2-wire transmitters

from backplane bus 5 V DC, max. 100 mA

Power loss

Power loss, typ. 2 W

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Analog inputs

Number of analog inputs 16

- For voltage/current measurement 16

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

20 V; 20 V DC permanent, 75 V DC for max. 1 s (duty factor 1:20)

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

40 mA

Constant measurement current for resistance-type transmitter,
typ.

1.67 mA

Input ranges

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

Input ranges (rated values), voltages

- 1 V to 5 V Yes

— Input resistance (1 V to 5 V) 100 k Ω

- -1 V to +1 V Yes

— Input resistance (-1 V to +1 V) 10 M Ω

- -10 V to +10 V Yes

— Input resistance (-10 V to +10 V) 100 k Ω

Input ranges (rated values), currents

- -20 mA to +20 mA Yes
- Input resistance (-20 mA to +20 mA) 50 Ω
- 4 mA to 20 mA Yes
- Input resistance (4 mA to 20 mA) 50 Ω

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. 13 bit
- Integration time, parameterizable Yes
- Basic conversion time (ms) 55 / 65 ms
- Integration time (ms) 50 / 60 ms
- Interference voltage suppression for interference frequency f1 in Hz

50 / 60 Hz

50 / 60 Hz

- Basic execution time of the module (all channels released)

1 040 ms; 880 / 1 040 ms

Encoder

Connection of signal encoders

- for voltage measurement Yes; possible
- for current measurement as 4-wire transducer Yes

Errors/accuracies

Temperature error (relative to input range), (+/-) 0.01 %/K

Operational error limit in overall temperature range

- Voltage, relative to input range, (+/-) 0.65 %; 1.0 % at 1 to 5 V; 0.65 % at ± 1 V, ± 10 V
- Current, relative to input range, (+/-) 0.65 %

Basic error limit (operational limit at 25 °C)

- Voltage, relative to input range, (+/-) 0.25 %; 0.5% at 1 to 5 V; 0.25% at ± 1 V, ± 10 V
- Current, relative to input range, (+/-) 0.25 %; at ± 20 mA, 4 to 20 mA

Interrupts/diagnostics/status information

Diagnostics function No

Potential separation

Potential separation analog inputs

- Potential separation analog inputs No
- between the channels No
- between the channels and backplane bus No
- Between the channels and load voltage L+ No

Isolation

Isolation tested with 500 V AC/707 V DC, type test

Dimensions

Width 25 mm

Height 290 mm

Depth 210 mm

Weights

Weight, approx. 500 g

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