

SIMATIC S7-300, Analog input SM 331, isolated, 2/3/4-wire, 8 AI, Resistor, Pt100/200/1000 NI100/120/200/500/1000, CU10, characteristics according to GOST 16 (internal 24) bit, 50ms, 1x 40-pole



Figure similar

| Supply voltage | |
|---|---|
| Load voltage L+ | |
| • Rated value (DC) | 24 V |
| • Reverse polarity protection | Yes |
| Input current | |
| from load voltage L+ (without load), max. | 240 mA |
| from backplane bus 5 V DC, max. | 100 mA |
| Power loss | |
| Power loss, typ. | 4.6 W |
| Analog inputs | |
| Number of analog inputs | 8 |
| • For resistance measurement | 8 |
| permissible input voltage for voltage input (destruction limit), max. | 75 V; 35 V continuous, 75 V for max. 1 s (mark to space ratio 1:20) |
| Input ranges | |
| • Voltage | No |

| | |
|--|-----|
| • Current | No |
| • Thermocouple | No |
| • Resistance thermometer | Yes |
| • Resistance | Yes |
| Input ranges (rated values), voltages | |
| • 0 to +10 V | No |
| • 1 V to 5 V | No |
| • 1 V to 10 V | No |
| • -1 V to +1 V | No |
| • -10 V to +10 V | No |
| • -2.5 V to +2.5 V | No |
| • -250 mV to +250 mV | No |
| • -5 V to +5 V | No |
| • -50 mV to +50 mV | No |
| • -500 mV to +500 mV | No |
| • -80 mV to +80 mV | No |
| Input ranges (rated values), currents | |
| • 0 to 20 mA | No |
| • -10 mA to +10 mA | No |
| • -20 mA to +20 mA | No |
| • -3.2 mA to +3.2 mA | No |
| • 4 mA to 20 mA | No |
| Input ranges (rated values), thermocouples | |
| • Type B | No |
| • Type C | No |
| • Type E | No |
| • Type J | No |
| • Type K | No |
| • Type L | No |
| • Type N | No |
| • Type R | No |
| • Type S | No |
| • Type T | No |
| • Type U | No |
| • Type TXK/TXK(L) to GOST | No |
| Input ranges (rated values), resistance thermometer | |
| • Cu 10 | Yes |
| • Ni 100 | Yes |
| • Ni 1000 | Yes |
| • LG-Ni 1000 | Yes |
| • Ni 120 | Yes |

| | |
|--|--|
| • Ni 200 | Yes |
| • Ni 500 | Yes |
| • Pt 100 | Yes |
| • Pt 1000 | Yes |
| • Pt 200 | Yes |
| • Pt 500 | Yes |
| Input ranges (rated values), resistors | |
| • 0 to 150 ohms | Yes |
| • 0 to 300 ohms | Yes |
| • 0 to 600 ohms | Yes |
| Characteristic linearization | |
| • parameterizable — for resistance thermometer | Yes Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni200, Ni500, Ni1000, Cu10; (standard/climate) |
| Cable length | |
| • shielded, max. | 200 m |
| Analog value generation for the inputs | |
| Measurement principle | integrating |
| Integration and conversion time/resolution per channel | |
| • Resolution with overrange (bit including sign), max. | 16 bit; Two's complement |
| • Integration time, parameterizable | Yes |
| • Basic conversion time (ms) | up to 4 channels: 10 ms per module, over 5 channels: 190 ms per module, 8 channels: 80 ms |
| • Interference voltage suppression for interference frequency f1 in Hz | 400 / 60 / 50 Hz |
| Encoder | |
| Connection of signal encoders | |
| • for resistance measurement with two-wire connection | Yes; without resistance correction |
| • 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, relative to input range, (+/-) | 0.1 % |
| • Resistance thermometer, relative to input range, (+/-) | ±1 K |
| Basic error limit (operational limit at 25 °C) | |
| • Resistance, relative to input range, (+/-) | 0.05 % |

| | |
|--|--------|
| • Resistance thermometer, relative to input range, (+/-) | ±0.5 K |
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Interrupts/diagnostics/status information

| | |
|----------------------|----------------------|
| Diagnostics function | Yes; Parameterizable |
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Alarms

- | | |
|----------------------|---------------------------------------|
| • Diagnostic alarm | Yes; Parameterizable per group |
| • Limit value alarm | Yes; Parameterizable |
| • Hardware interrupt | Yes; Parameterizable, channels 0 to 7 |

Diagnostic messages

- | | |
|-----------------------------------|-----|
| • Diagnostic information readable | Yes |
|-----------------------------------|-----|

Diagnostics indication LED

- | | |
|------------------------|-----|
| • Group error SF (red) | Yes |
|------------------------|-----|

Potential separation

Potential separation analog inputs

- | | |
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| • between the channels and backplane bus | Yes |
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Isolation

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| Isolation tested with | 500 V DC |
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Connection method

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| required front connector | 40-pin |
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Dimensions

| | |
|--------|--------|
| Width | 40 mm |
| Height | 125 mm |
| Depth | 120 mm |

Weights

| | |
|-----------------|-------|
| Weight, approx. | 272 g |
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last modified: 06/19/2019