

SIMATIC S7-300 advanced controller

I/O modules

Analog modules

SM 334 analog input/output modules**Overview**

- Analog inputs and outputs
- For the connection of analog sensors and actuators

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Technical specifications

| Article number | 6ES7334-0CE01-0AA0 SM334, 4AI, 2AO, NON ISOL. | 6ES7334-0KE00-0AB0 SM334, 4AI/2AO, 0-10V F.PT100 |
|---|---|--|
| Product type designation | | |
| Supply voltage | | |
| Load voltage L+ | | |
| • Rated value (DC) | 24 V | 24 V |
| Input current | | |
| from load voltage L+ (without load), max. | 110 mA | 80 mA |
| from backplane bus 5 V DC, max. | 55 mA | 60 mA |
| Power losses | | |
| Power loss, typ. | 3 W | 2 W |
| Analog inputs | | |
| Number of analog inputs | 4 | 4 |
| • For voltage measurement | 4 | 2 |
| • For resistance measurement | | 4 |
| permissible input voltage for voltage input (destruction limit), max. | 20 V | 20 V; continuous; 75 V for max. 1 s (mark to space ratio 1:20) |
| permissible input current for current input (destruction limit), max. | 40 mA | |
| Cycle time (all channels) max. | 5 ms | 85 ms |
| Input ranges (rated values), voltages | | |
| • 0 to +10 V | Yes | Yes |
| Input ranges (rated values), currents | | |
| • 0 to 20 mA | Yes | |
| Input ranges (rated values), resistance thermometer | | |
| • Pt 100 | | Yes; only climatic range |
| Input ranges (rated values), resistors | | |
| • 0 to 10000 ohms | | Yes |

Technical specifications (continued)

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|--|---|--|
| Analog outputs | | |
| Number of analog outputs | 2 | 2 |
| Voltage output, short-circuit protection | Yes | Yes |
| Voltage output, short-circuit current, max. | 11 mA | 10 mA |
| Current output, no-load voltage, max. | 15 V | |
| Output ranges, voltage | | |
| • 0 to 10 V | Yes | Yes |
| Output ranges, current | | |
| • 0 to 20 mA | Yes | |
| Load impedance (in rated range of output) | | |
| • with voltage outputs, min. | 5 kΩ | 2.5 kΩ |
| • with voltage outputs, capacitive load, max. | 1 μF | 1 μF |
| • with current outputs, max. | 300 Ω | |
| • with current outputs, inductive load, max. | 1 mH | |
| Cable length | | |
| • shielded, max. | 200 m | 100 m |
| Analog value creation | | |
| Integration and conversion time/ resolution per channel | | |
| • Resolution with overrange (bit including sign), max. | 8 bit | 12 bit |
| • Integration time (ms) | | 16,67 / 20 ms |
| Settling time | | |
| • for resistive load | 0.3 ms | 0.8 ms |
| • for capacitive load | 3 ms | 0.8 ms |
| • for inductive load | 0.3 ms | |
| Encoder | | |
| Connection of signal encoders | | |
| • for current measurement as 4-wire transducer | Yes | |
| • for resistance measurement with two-wire connection | | Yes |
| • for resistance measurement with three-wire connection | | Yes |
| • for resistance measurement with four-wire connection | | Yes |

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SM 334 analog input/output modules**Technical specifications** (continued)

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|---|---|--|
| Errors/accuracies | | |
| Operational limit in overall temperature range | | |
| • Voltage, relative to input area, (+/-) | 0.9 % | 0.7 %; 0 to 10 V |
| • Current, relative to input area, (+/-) | 0.8 % | |
| • Resistance, relative to input area, (+/-) | | 3.5 %; 10 kOhm |
| • Resistance thermometer, relative to input area, (+/-) | | 1 % |
| • Voltage, relative to output area, (+/-) | 0.6 % | 1 % |
| • Current, relative to output area, (+/-) | 1 % | |
| Basic error limit (operational limit at 25 °C) | | |
| • Voltage, relative to input area, (+/-) | 0.7 % | 0.5 %; 0 to 10 V |
| • Current, relative to input area, (+/-) | 0.6 % | |
| • Resistance, relative to input area, (+/-) | | 2.8 %; 10 kOhm |
| • Resistance thermometer, relative to input area, (+/-) | | 0.8 % |
| • Voltage, relative to output area, (+/-) | 0.5 % | 0.85 % |
| • Current, relative to output area, (+/-) | 0.5 % | |
| Interrupts/diagnostics/status information | | |
| Alarms | | |
| • Alarms | No | No |
| Diagnostic messages | | |
| • Diagnostic functions | No | No |
| Galvanic isolation | | |
| Galvanic isolation analog inputs | | |
| • between the channels and the backplane bus | No | Yes |
| Galvanic isolation analog outputs | | |
| • between the channels and the backplane bus | No | Yes |
| Isolation | | |
| Isolation checked with | 500 V DC | 500 V DC |
| Connection method | | |
| required front connector | 20-pin | 20-pin |
| Dimensions | | |
| Width | 40 mm | 40 mm |
| Height | 125 mm | 125 mm |
| Depth | 120 mm | 120 mm |
| Weights | | |
| Weight, approx. | 285 g | 200 g |

| Ordering data | Article No. | Article No. |
|---|--|---|
| SM 334 analog input/output modules incl. labeling strips, bus connector 4 inputs, 2 outputs 4 inputs, 2 outputs, resistance measurement, Pt 100 | 6ES7334-0CE01-0AA0 6ES7334-0KE00-0AB0 | 6ES7392-2XY00-0AA0 |
| Front connectors 20-pin, with screw contacts • 1 unit • 100 units 20-pin, with spring-loaded terminals • 1 unit • 100 units | 6ES7392-1AJ00-0AA0 6ES7392-1AJ00-1AB0 6ES7392-1BJ00-0AA0 6ES7392-1BJ00-1AB0 | 6ES7392-2XX00-0AA0 |
| Front door, elevated design e.g. for 32-channel modules; for connecting 1.3 mm ² /16 AWG wires | 6ES7328-0AA00-7AA0 | 6ES7392-2AX00-0AA0 6ES7392-2BX00-0AA0 6ES7392-2CX00-0AA0 6ES7392-2DX00-0AA0 |
| SIMATIC TOP connect | See page 5/247 | 6ES7998-8XC01-8YE0 |
| Bus connectors 1 unit (spare part) | 6ES7390-0AA00-0AA0 | SIMATIC Manual Collection Electronic manuals on DVD, multilingual: LOGO!, SIMADYN, SIMATIC bus components, SIMATIC C7, SIMATIC distributed I/O, SIMATIC HMI, SIMATIC Sensors, SIMATIC NET, SIMATIC PC Based Automation, SIMATIC PCS 7, SIMATIC PG/PC, SIMATIC S7, SIMATIC Software, SIMATIC TDC |
| Shield connecting element 80 mm wide, with 2 rows for 4 terminal elements each | 6ES7390-5AA00-0AA0 | SIMATIC Manual Collection update service for 1 year Current "Manual Collection" DVD and the three subsequent updates |
| Terminal elements 2 units For 2 cables with 2 mm to 6 mm diameter For 1 cable with 3 mm to 8 mm diameter For 1 cable with 4 mm to 13 mm diameter | 6ES7390-5AB00-0AA0 6ES7390-5BA00-0AA0 6ES7390-5CA00-0AA0 | |