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## Data sheet 6ES7134-6JD00-0CA1

SIMATIC ET 200SP, Analog input module, AI 4xRTD/TC High Feature, suitable for BU type A0, A1, Color code CC00, channel diagnostics, 16 bit, +/-0.1%, 2-/3-/4-wire



| General information | |
|---|---|
| Product type designation | AI 4xRTD/TC 2-/3-/4-wire HF |
| Firmware version | V2.0 |
| • FW update possible | Yes |
| usable BaseUnits | BU type A0, A1 |
| Color code for module-specific color identification plate | CC00 |
| **Product function** | |
| • I&M data | Yes; I&M0 to I&M3 |
| **Engineering with** | |
| • STEP 7 TIA Portal configurable/integrated as of version | V12 SP1 / V13 |
| • STEP 7 configurable/integrated as of version | V5.5 SP3 / V5.5 SP4 |
| • PCS 7 configurable/integrated as of version | V8.1 SP1 |
| • PROFIBUS as of GSD version/GSD revision | GSD Revision 5 |
| • PROFINET as of GSD version/GSD revision | GSDML V2.3 |
| **Operating mode** | |
| • Oversampling | No |
| • MSI | No |


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| | |
|---|---|
| **CiR – Configuration in RUN** | |
| Reparameterization possible in RUN | Yes |
| Calibration possible in RUN | Yes |
| **Supply voltage** | |
| Rated value (DC) | 24 V |
| permissible range, lower limit (DC) | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V |
| Reverse polarity protection | Yes |
| **Input current** | |
| Current consumption, max. | 35 mA |
| **Power loss** | |
| Power loss, typ. | 0.75 W |
| **Address area** | |
| Address space per module | |
| • Address space per module, max. | 8 byte; + 1 byte for QI information |
| **Analog inputs** | |
| Number of analog inputs | 4 |
| • For voltage measurement | 4 |
| • For resistance/resistance thermometer measurement | 4 |
| • For thermocouple measurement | 4 |
| permissible input voltage for voltage input (destruction limit), max. | 30 V |
| Constant measurement current for resistance-type transmitter, typ. | 0.7 mA; 1.7 mA for Cu10 sensors |
| Cycle time (all channels), min. | Sum of the basic conversion times and additional processing times (depending on the parameterization of the active channels); for line compensation in case of a three-wire connection, an additional cycle is necessary |
| Technical unit for temperature measurement adjustable | Yes; °C/°F/K |
| Input ranges (rated values), voltages | |
| • -1 V to +1 V | Yes; 16 bit incl. sign |
| • Input resistance (-1 V to +1 V) | 1 MΩ |
| • -250 mV to +250 mV | Yes; 16 bit incl. sign |
| • Input resistance (-250 mV to +250 mV) | 1 MΩ |
| • -50 mV to +50 mV | Yes; 16 bit incl. sign |
| • Input resistance (-50 mV to +50 mV) | 1 MΩ |
| • -80 mV to +80 mV | Yes; 16 bit incl. sign |
| • Input resistance (-80 mV to +80 mV) | 1 MΩ |
| Input ranges (rated values), thermocouples | |


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|---|---|
| • Type B | Yes; 16 bit incl. sign |
| • Input resistance (Type B) | 1 MΩ |
| • Type C | Yes; 16 bit incl. sign |
| • Input resistance (Type C) | 1 MΩ |
| • Type E | Yes; 16 bit incl. sign |
| • Input resistance (Type E) | 1 MΩ |
| • Type J | Yes; 16 bit incl. sign |
| • Input resistance (type J) | 1 MΩ |
| • Type K | Yes; 16 bit incl. sign |
| • Input resistance (Type K) | 1 MΩ |
| • Type L | Yes; 16 bit incl. sign |
| • Input resistance (Type L) | 1 MΩ |
| • Type N | Yes; 16 bit incl. sign |
| • Input resistance (Type N) | 1 MΩ |
| • Type R | Yes; 16 bit incl. sign |
| • Input resistance (Type R) | 1 MΩ |
| • Type S | Yes; 16 bit incl. sign |
| • Input resistance (Type S) | 1 MΩ |
| • Type T | Yes; 16 bit incl. sign |
| • Input resistance (Type T) | 1 MΩ |
| • Type U | Yes; 16 bit incl. sign |
| • Input resistance (Type U) | 1 MΩ |
| • Type TXK/TXK(L) to GOST | Yes; 16 bit incl. sign |
| • Input resistance (Type TXK/TXK(L) to GOST) | 1 MΩ |
| Input ranges (rated values), resistance thermometer | |
| • Cu 10 | Yes; 16 bit incl. sign |
| • Input resistance (Cu 10) | 1 MΩ |
| • Ni 100 | Yes; 16 bit incl. sign |
| • Input resistance (Ni 100) | 1 MΩ |
| • Ni 1000 | Yes; 16 bit incl. sign |
| • Input resistance (Ni 1000) | 1 MΩ |
| • LG-Ni 1000 | Yes; 16 bit incl. sign |
| • Input resistance (LG-Ni 1000) | 1 MΩ |
| • Ni 120 | Yes; 16 bit incl. sign |
| • Input resistance (Ni 120) | 1 MΩ |
| • Ni 200 | Yes; 16 bit incl. sign |
| • Input resistance (Ni 200) | 1 MΩ |
| • Ni 500 | Yes; 16 bit incl. sign |
| • Input resistance (Ni 500) | 1 MΩ |
| • Pt 100 | Yes; 16 bit incl. sign |
| • Input resistance (Pt 100) | 1 MΩ |


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| | |
|---|---|
| • Pt 1000 | Yes; 16 bit incl. sign |
| • Input resistance (Pt 1000) | 1 MΩ |
| • Pt 200 | Yes; 16 bit incl. sign |
| • Input resistance (Pt 200) | 1 MΩ |
| • Pt 500 | Yes; 16 bit incl. sign |
| • Input resistance (Pt 500) | 1 MΩ |
| Input ranges (rated values), resistors | |
| • 0 to 150 ohms | Yes; 15 bit |
| • Input resistance (0 to 150 ohms) | 1 MΩ |
| • 0 to 300 ohms | Yes; 15 bit |
| • Input resistance (0 to 300 ohms) | 1 MΩ |
| • 0 to 600 ohms | Yes; 15 bit |
| • Input resistance (0 to 600 ohms) | 1 MΩ |
| • 0 to 3000 ohms | Yes; 15 bit |
| • Input resistance (0 to 3000 ohms) | 1 MΩ |
| • 0 to 6000 ohms | Yes; 15 bit |
| • Input resistance (0 to 6000 ohms) | 1 MΩ |
| • PTC | Yes; 15 bit |
| • Input resistance (PTC) | 1 MΩ |
| Thermocouple (TC) | |
| Temperature compensation | |
| — parameterizable | Yes |
| — Reference channel of the module | Yes |
| — internal comparison point | Yes; with BaseUnit type A1 |
| — Reference channel of the group | Yes |
| — Number of reference channel groups | 4; Group 0 to 3 |
| — fixed reference temperature | Yes |
| Cable length | |
| • shielded, max. | 200 m; 50 m with thermocouples |

| | |
|---|---|
| **Analog value generation for the inputs** | |
| Measurement principle | integrating (Sigma-Delta) |
| Integration and conversion time/resolution per channel | |
| • Resolution with overrange (bit including sign), max. | 16 bit |
| • Integration time, parameterizable | Yes |
| • Basic conversion time, including integration time (ms) | |
| — additional processing time for wire-break check | 2 ms; In the ranges resistance thermometers, resistors and thermocouples |
| — additional power line wire-break check | 2 ms; for 3/4 wire transducer (resistance thermometer and resistor) |


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|---|---|
| • Interference voltage suppression for interference frequency f1 in Hz | 16.6 / 50 / 60 Hz |
| • Conversion time (per channel) | 180 / 60 / 50 ms |
| Smoothing of measured values | |
| • Number of smoothing levels | 4; None; 4/8/16 times |
| • parameterizable | Yes |

| Encoder | |
|---|---|
| Connection of signal encoders | |
| • for voltage measurement | 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 |

| Errors/accuracies | |
|---|---|
| Linearity error (relative to input range), (+/-) | 0.01 %; ±0.1 % for resistance thermometers and resistance |
| Temperature error (relative to input range), (+/-) | 0.0009 %/K; ±0.005 % / K at thermocouple |
| Crosstalk between the inputs, min. | -50 dB |
| Repeat accuracy in steady state at 25 °C (relative to input range), (+/-) | 0.05 % |
| Operational error limit in overall temperature range | |
| • Voltage, relative to input range, (+/-) | 0.1 % |
| • Resistance, relative to input range, (+/-) | 0.1 % |
| Basic error limit (operational limit at 25 °C) | |
| • Voltage, relative to input range, (+/-) | 0.05 % |
| • Resistance, relative to input range, (+/-) | 0.05 % |
| Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency | |
| • Series mode interference (peak value of interference < rated value of input range), min. | 70 dB |
| • Common mode voltage, max. | 10 V |
| • Common mode interference, min. | 90 dB |

| Isochronous mode | |
|---|---|
| Isochronous operation (application synchronized up to terminal) | No |

| Interrupts/diagnostics/status information | |
|---|---|
| Diagnostics function | Yes |
| Alarms | |
| • Diagnostic alarm | Yes |
| • Limit value alarm | Yes; two upper and two lower limit values in each case |
| Diagnostic messages | |
| • Monitoring the supply voltage | Yes |


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|---|---|
| • Wire-break | Yes; channel by channel |
| • Group error | Yes |
| • Overflow/underflow | Yes; channel by channel |
| Diagnostics indication LED | |
| • Monitoring of the supply voltage (PWR-LED) | Yes; Green PWR LED |
| • Channel status display | Yes; Green LED |
| • for channel diagnostics | Yes; Red LED |
| • for module diagnostics | Yes; green/red DIAG LED |
| **Potential separation** | |
| Potential separation channels | |
| • between the channels | No |
| • between the channels and backplane bus | Yes |
| • between the channels and the power supply of the electronics | Yes |
| **Permissible potential difference** | |
| between the inputs (UCM) | 10 V DC |
| **Isolation** | |
| Isolation tested with | 707 V DC (type test) |
| **Dimensions** | |
| Width | 15 mm |
| Height | 73 mm |
| Depth | 58 mm |
| **Weights** | |
| Weight, approx. | 30 g |
| **last modified:** | 07/01/2019 |


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