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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	V2.1
● 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
● Isochronous mode	No
● Adjustment of measuring range	Yes
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	V12 SP1 / V13
● STEP 7 configurable/integrated from version	V5.5 SP3 / V5.5 SP4
● PCS 7 configurable/integrated from version	V8.1 SP1
● PROFIBUS from GSD version/GSD revision	GSD Revision 5
● PROFINET from GSD version/GSD revision	GSDML V2.3
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 (rated value)	30 mA
Current consumption, max.	32 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
Hardware configuration	
Automatic encoding	
● Type of mechanical coding element	Type A
Analog inputs	
Number of analog inputs	4
permissible input voltage for voltage input (destruction limit), max.	30 V
Constant measurement current for resistance-type transmitter,	2 mA

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typ.	
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	
● 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
● 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

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— 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
— Number of reference channel groups	4; Group 0 to 3
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)
● Interference voltage suppression for interference frequency f1 in Hz	16.6 / 50 / 60 Hz
● Conversion time (per channel)	180 / 60 / 50 / (67.5 / 22.5 / 18.75) 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; With conversion time 67.5 / 22.5 / 18.75 ms: 40 dB
● Common mode voltage, max.	10 V
● Common mode interference, min.	90 dB
Interrupts/diagnostics/status information	
Alarms	

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● Limit value alarm	Yes; two upper and two lower limit values in each case
Diagnoses	
● Monitoring the supply voltage	Yes
● 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
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
● horizontal installation, min.	-30 °C; < 0 °C as of FS08
● horizontal installation, max.	60 °C
● vertical installation, min.	-30 °C; < 0 °C as of FS08
● vertical installation, max.	50 °C
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm

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