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Data sheet 6AG1134-6JD00-2CA1

SIPLUS ET 200SP, Analog input module, AI 4xRTD/TC High Feature, -40...+60°C start up -25°C with conformal coating based on 6ES7134-6JD00-0CA1. suitable for BU type A0, A1, Color code CC00, channel diagnostics, 16 bit, +/-0.1% , 2-/3-/4-wire



Figure similar

General information	
Product type designation	AI 4xRTD/TC 2-/3-/4-wire HF
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
Operating mode	
• Oversampling	No
• MSI	No

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

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permissible range, upper limit (DC)	28.8 V
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	
• 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

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• 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
• 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
— Input resistance (Pt 500)	1 MΩ
Input ranges (rated values), resistors	
• 0 to 150 ohms	Yes; 15 bit

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— 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)
• 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

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• 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 %
Temperature error (relative to input range), (+/-)	0.005 %/K
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, (+/-)	0.2 %
• Resistance, relative to input range, (+/-)	0.2 %
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
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
• 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

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• 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)
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C
• horizontal installation, max.	60 °C; = Tmax
• vertical installation, min.	-40 °C; = Tmin; Startup @ -25 °C
• vertical installation, max.	50 °C; = Tmax
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	5 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 080 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax - 20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)
Relative humidity	
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
Coolants and lubricants	
— Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air
Use in stationary industrial systems	
— to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
— to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *
— Against mechanical environmental conditions acc. to EN 60721-3-3	Yes; Class 3M8 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0)
Use on ships/at sea	
— to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
— to chemically active substances according to EN 60721-3-6	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *
— Against mechanical environmental conditions acc. to EN 60721-3-6	Yes; Class 6M4 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0)

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Usage in industrial process technology	
— Against chemically active substances acc. to EN 60654-4	Yes; Class 3 (excluding trichlorethylene)
— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
Remark	
— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
• Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high reliability
• Protection against fouling acc. to EN 60664-3	Yes; Type 1 protection
• Military testing according to MIL-I-46058C, Amendment 7	Yes; Discoloration of coating possible during service life
• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A	Yes; Conformal coating, Class A

Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm

Weights	
Weight, approx.	30 g

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