



Figure similar

SIPLUS ET 200SP AI 4xTC HS based on 6ES7134-6JD00-0DA1 with conformal coating, -40...+60 °C, analog input module, suitable for BU type A0, A1, color code CC00, channel diagnostics, 16 bit, +/-0.1%,

General information	
Product type designation	AI 4xTC HS
Firmware version	
• FW update possible	Yes
based on	6ES7134-6JD00-0DA1
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
• Measuring range scalable	Yes
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	see entry ID: 109746275
Operating mode	
• Oversampling	No
• MSI	Yes
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)	37 mA
Current consumption, max.	50 mA
Power loss	
Power loss, typ.	0.9 W
Address area	
Address space per module	
• Address space per module, max.	16 byte; + 1 byte for QI information
Hardware configuration	
Automatic encoding	Yes
• Mechanical coding element	Yes
• Type of mechanical coding element	Type A
Selection of BaseUnit for connection variants	
• 2-wire connection	BU type A0, A1

Analog inputs	
Number of analog inputs	4
permissible input voltage for voltage input (destruction limit), max.	30 V
Cycle time (all channels), min.	5 ms; Sum of the basic conversion times and additional processing times (depending on the parameterization of the active channels)
Technical unit for temperature measurement adjustable	Yes; °C/°F/K
Input ranges (rated values), voltages	
• -1 V to +1 V — Input resistance (-1 V to +1 V)	Yes; 16 bit incl. sign 1 MΩ
• -250 mV to +250 mV — Input resistance (-250 mV to +250 mV)	Yes; 16 bit incl. sign 1 MΩ
• -50 mV to +50 mV — Input resistance (-50 mV to +50 mV)	Yes; 16 bit incl. sign 1 MΩ
• -80 mV to +80 mV — Input resistance (-80 mV to +80 mV)	Yes; 16 bit incl. sign 1 MΩ
Input ranges (rated values), thermocouples	
• Type B — Input resistance (Type B)	Yes; 16 bit incl. sign 1 MΩ
• Type C — Input resistance (Type C)	Yes; 16 bit incl. sign 1 MΩ
• Type E — Input resistance (Type E)	Yes; 16 bit incl. sign 1 MΩ
• Type J — Input resistance (type J)	Yes; 16 bit incl. sign 1 MΩ
• Type K — Input resistance (Type K)	Yes; 16 bit incl. sign 1 MΩ
• Type L — Input resistance (Type L)	Yes; 16 bit incl. sign 1 MΩ
• Type N — Input resistance (Type N)	Yes; 16 bit incl. sign 1 MΩ
• Type R — Input resistance (Type R)	Yes; 16 bit incl. sign 1 MΩ
• Type S — Input resistance (Type S)	Yes; 16 bit incl. sign 1 MΩ
• Type T — Input resistance (Type T)	Yes; 16 bit incl. sign 1 MΩ
• Type U — Input resistance (Type U)	Yes; 16 bit incl. sign 1 MΩ
• Type TXK/TXK(L) to GOST — Input resistance (Type TXK/TXK(L) to GOST)	Yes; 16 bit incl. sign 1 MΩ
Thermocouple (TC)	
Temperature compensation	
— parameterizable	Yes
— Reference channel of the module	No
— 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; 100 m for 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	1 ms
• Interference voltage suppression for interference frequency f1 in Hz	16.6 / 50 / 60 Hz / off

• Conversion time (per channel)	180/60/50/1.25 ms
Smoothing of measured values	
• Number of smoothing levels	4; None; 4/8/16 times
• parameterizable	Yes
• Step: None	Yes
• Step: low	Yes
• Step: Medium	Yes
• Step: High	Yes
Encoder	
Connection of signal encoders	
• for voltage measurement	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.	-70 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.03 %
Operational error limit in overall temperature range	
• Voltage, relative to input range, (+/-)	0.2 %; 0.5 % when voltage frequency converter OFF
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to input range, (+/-)	0.05 %; 0.2 % when SFU OFF
Interference voltage suppression for $f = n \times (f_1 +/ - 1 \%)$, f_1 = interference frequency	
• Series mode interference (peak value of interference < rated value of input range), min.	70 dB
• Common mode voltage, max.	60 V; DC
• 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
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 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)	60 V DC
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Suitable for applications according to AMS 2750	Yes; Declaration of Conformity, see online support entry 109757262
Suitable for applications according to CQI-9	Yes; Based on AMS 2750 E
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	-40 °C; = Tmin (incl. condensation/frost)
• horizontal installation, max.	60 °C; = Tmax; +70 °C with configured empty slots to the left and right of the module
• vertical installation, min.	-40 °C; = Tmin (incl. condensation/frost)

• 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)		
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.	33 g		
Classifications			
	Version	Classification	
	eClass	14	27-24-26-01
	eClass	12	27-24-26-01
	eClass	9.1	27-24-26-01
	eClass	9	27-24-26-01
	eClass	8	27-24-26-01
	eClass	7.1	27-24-26-01

eClass	6	27-24-26-01
ETIM	10	EC001596
ETIM	9	EC001596
ETIM	8	EC001596
ETIM	7	EC001596
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

EMV

[Manufacturer Declaration](#)



[China RoHS](#)



For use in hazardous locations



[CCC-Ex](#)



IECEx



DNV

Maritime application

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