



Figure similar

SIPLUS ET 200SP AI 2xU/I 2-, 4-wire HS based on 6ES7134-6HB00-0DA1 with conformal coating, -40...+60 °C, analog input module, suitable for BU type A0, A1, color code CC00, channel diagnostics, 16-bit, +/-0.3%

General information	
Product type designation	AI 2xU/I 2-/4-wire HS
Firmware version	V2.0
<ul style="list-style-type: none"> FW update possible 	Yes
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	CC00
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> Isochronous mode 	Yes
<ul style="list-style-type: none"> Measuring range scalable 	No
Operating mode	
<ul style="list-style-type: none"> Oversampling 	Yes; 2 channels per module
<ul style="list-style-type: none"> MSI 	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
Calibration possible in RUN	No
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)	39 mA; without sensor supply
Encoder supply	
24 V encoder supply	
<ul style="list-style-type: none"> 24 V 	Yes
<ul style="list-style-type: none"> Short-circuit protection 	Yes
<ul style="list-style-type: none"> Output current, max. 	20 mA; max. 50 mA per channel for a duration < 10 s
Power loss	
Power loss, typ.	0.95 W; without sensor supply
Address area	
Address space per module	
<ul style="list-style-type: none"> Address space per module, max. 	4 byte; + 1 byte for QI information (32 bytes in the oversampling operating mode)
Analog inputs	
Number of analog inputs	2; Differential inputs
permissible input voltage for voltage input (destruction limit), max.	30 V
permissible input current for current input (destruction limit), max.	50 mA

Cycle time (all channels), min.	125 μ s
Analog input with oversampling	Yes
<ul style="list-style-type: none"> • Values per cycle, max. • Resolution, min. 	16 50 μ s
Input ranges (rated values), voltages	
<ul style="list-style-type: none"> • 0 to +10 V <ul style="list-style-type: none"> — Input resistance (0 to 10 V) • 1 V to 5 V <ul style="list-style-type: none"> — Input resistance (1 V to 5 V) • -10 V to +10 V <ul style="list-style-type: none"> — Input resistance (-10 V to +10 V) • -5 V to +5 V <ul style="list-style-type: none"> — Input resistance (-5 V to +5 V) 	Yes; 15 bit 75 k Ω Yes; 13 bit 75 k Ω Yes; 16 bit incl. sign 75 k Ω Yes; 15 bit incl. sign 75 k Ω
Input ranges (rated values), currents	
<ul style="list-style-type: none"> • 0 to 20 mA <ul style="list-style-type: none"> — Input resistance (0 to 20 mA) • -20 mA to +20 mA <ul style="list-style-type: none"> — Input resistance (-20 mA to +20 mA) • 4 mA to 20 mA <ul style="list-style-type: none"> — Input resistance (4 mA to 20 mA) 	Yes; 15 bit 130 Ω Yes; 16 bit incl. sign 130 Ω Yes; 14 bit 130 Ω
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	1 000 m; 200 m for voltage measurement
Analog value generation for the inputs	
Measurement principle	Actual value encryption (successive approximation)
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> • Resolution with overrange (bit including sign), max. • Interference voltage suppression for interference frequency f_1 in Hz • Conversion time (per channel) 	16 bit No 10 μ s
Smoothing of measured values	
<ul style="list-style-type: none"> • Number of smoothing levels • parameterizable 	7; none; 2-/4-/8-/16-/32-/64-fold Yes
Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> • for voltage measurement • for current measurement as 2-wire transducer <ul style="list-style-type: none"> — Burden of 2-wire transmitter, max. • for current measurement as 4-wire transducer 	Yes Yes 650 Ω Yes
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.03 %
Temperature error (relative to input range), (+/-)	0.01 %/K
Crosstalk between the inputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.1 %
Operational error limit in overall temperature range	
<ul style="list-style-type: none"> • Voltage, relative to input range, (+/-) • Current, relative to input range, (+/-) 	0.5 % 0.5 %
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> • Voltage, relative to input range, (+/-) • Current, relative to input range, (+/-) 	0.2 % 0.2 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, $f_1 =$ interference frequency	
<ul style="list-style-type: none"> • Common mode voltage, max. • Common mode interference, min. 	35 V 90 dB
Isochronous mode	
Filtering and processing time (TCI), min.	80 μ s
Bus cycle time (TDP), min.	125 μ s
Interrupts/diagnostics/status information	
Alarms	
<ul style="list-style-type: none"> • Diagnostic alarm • Limit value alarm 	Yes Yes; two upper and two lower limit values in each case
Diagnoses	
<ul style="list-style-type: none"> • Wire-break • Short-circuit 	Yes; channel-by-channel, at 4 to 20 mA only Yes; channel-by-channel, at 1 to 5 V or for current measuring ranges

<ul style="list-style-type: none"> • Group error • Overflow/underflow 	short-circuit in encoder supply Yes Yes
Diagnostics indication LED	
<ul style="list-style-type: none"> • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics 	Yes; green PWR LED Yes; green LED Yes; red LED Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
<ul style="list-style-type: none"> • between the channels • between the channels and backplane bus • between the channels and the power supply of the electronics 	Yes Yes Yes
Permissible potential difference	
between different circuits	75 V DC/60 V AC (base isolation)
between the inputs (UCM)	75 V DC/60 V AC
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> • horizontal installation, min. • horizontal installation, max. 	-40 °C; = Tmin (incl. condensation/frost) 60 °C; = Tmax; +70 °C with configured empty slots to the left and right of the module
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude 	5 000 m Tmin ... Tmax at 1 140 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	
<ul style="list-style-type: none"> • With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation
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	
<ul style="list-style-type: none"> • Coatings for printed circuit board assemblies acc. to EN 61086 	Yes; Class 2 for high reliability

- Protection against fouling acc. to EN 60664-3
- Military testing according to MIL-I-46058C, Amendment 7
- Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A

Yes; Type 1 protection
 Yes; Discoloration of coating possible during service life
 Yes; Conformal coating, Class A

Dimensions

Width	15 mm
Height	73 mm
Depth	58 mm

Weights

Weight, approx.	32 g
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