



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"> <li>FW update possible</li> </ul>	Yes
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	CC00
Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> <li>Isochronous mode</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Measuring range scalable</li> </ul>	No
Operating mode	
<ul style="list-style-type: none"> <li>Oversampling</li> </ul>	Yes; 2 channels per module
<ul style="list-style-type: none"> <li>MSI</li> </ul>	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"> <li>24 V</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Short-circuit protection</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Output current, max.</li> </ul>	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"> <li>Address space per module, max.</li> </ul>	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 µs
Analog input with oversampling	Yes
• Values per cycle, max.	16
• Resolution, min.	50 µs
<b>Input ranges (rated values), voltages</b>	
• 0 to +10 V	Yes; 15 bit
— Input resistance (0 to 10 V)	75 kΩ
• 1 V to 5 V	Yes; 13 bit
— Input resistance (1 V to 5 V)	75 kΩ
• -10 V to +10 V	Yes; 16 bit incl. sign
— Input resistance (-10 V to +10 V)	75 kΩ
• -5 V to +5 V	Yes; 15 bit incl. sign
— Input resistance (-5 V to +5 V)	75 kΩ
<b>Input ranges (rated values), currents</b>	
• 0 to 20 mA	Yes; 15 bit
— Input resistance (0 to 20 mA)	130 Ω
• -20 mA to +20 mA	Yes; 16 bit incl. sign
— Input resistance (-20 mA to +20 mA)	130 Ω
• 4 mA to 20 mA	Yes; 14 bit
— Input resistance (4 mA to 20 mA)	130 Ω
<b>Cable length</b>	
• shielded, max.	1 000 m; 200 m for voltage measurement
<b>Analog value generation for the inputs</b>	
Measurement principle	Actual value encryption (successive approximation)
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	16 bit
• Interference voltage suppression for interference frequency f1 in Hz	No
• Conversion time (per channel)	10 µs
<b>Smoothing of measured values</b>	
• Number of smoothing levels	7; none; 2-/4-/8-/16-/32-/64-fold
• parameterizable	Yes
<b>Encoder</b>	
<b>Connection of signal encoders</b>	
• for voltage measurement	Yes
• for current measurement as 2-wire transducer	Yes
— Burden of 2-wire transmitter, max.	650 Ω
• for current measurement as 4-wire transducer	Yes
<b>Errors/accuracies</b>	
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 %
<b>Operational error limit in overall temperature range</b>	
• Voltage, relative to input range, (+/-)	0.5 %
• Current, relative to input range, (+/-)	0.5 %
<b>Basic error limit (operational limit at 25 °C)</b>	
• Voltage, relative to input range, (+/-)	0.2 %
• Current, relative to input range, (+/-)	0.2 %
<b>Interference voltage suppression for <math>f = n \times (f1 \pm 1 \%)</math>, f1 = interference frequency</b>	
• Common mode voltage, max.	35 V
• Common mode interference, min.	90 dB
<b>Isochronous mode</b>	
Filtering and processing time (TCI), min.	80 µs
Bus cycle time (TDP), min.	125 µs
<b>Interrupts/diagnostics/status information</b>	
<b>Alarms</b>	
• Diagnostic alarm	Yes
• Limit value alarm	Yes; two upper and two lower limit values in each case
<b>Diagnoses</b>	

<ul style="list-style-type: none"> <li>• Wire-break</li> <li>• Short-circuit</li> </ul>	<p>Yes; channel-by-channel, at 4 to 20 mA only</p> <p>Yes; channel-by-channel, at 1 to 5 V or for current measuring ranges short-circuit in encoder supply</p>
<ul style="list-style-type: none"> <li>• Group error</li> <li>• Overflow/underflow</li> </ul>	<p>Yes</p> <p>Yes</p>
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>• Monitoring of the supply voltage (PWR-LED)</li> <li>• Channel status display</li> <li>• for channel diagnostics</li> <li>• for module diagnostics</li> </ul>	<p>Yes; green PWR LED</p> <p>Yes; green LED</p> <p>Yes; red LED</p> <p>Yes; green/red DIAG LED</p>
<b>Potential separation</b>	
<b>Potential separation channels</b>	
<ul style="list-style-type: none"> <li>• between the channels</li> <li>• between the channels and backplane bus</li> <li>• between the channels and the power supply of the electronics</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p>
<b>Permissible potential difference</b>	
between different circuits	75 V DC/60 V AC (base isolation)
between the inputs (UCM)	75 V DC/60 V AC
<b>Isolation</b>	
Isolation tested with	707 V DC (type test)
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
<ul style="list-style-type: none"> <li>• horizontal installation, min.</li> <li>• horizontal installation, max.</li> </ul>	<p>-40 °C; = Tmin (incl. condensation/frost)</p> <p>60 °C; = Tmax; +70 °C with configured empty slots to the left and right of the module</p>
<b>Altitude during operation relating to sea level</b>	
<ul style="list-style-type: none"> <li>• Installation altitude above sea level, max.</li> <li>• Ambient air temperature-barometric pressure-altitude</li> </ul>	<p>5 000 m</p> <p>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)</p>
<b>Relative humidity</b>	
<ul style="list-style-type: none"> <li>• With condensation, tested in accordance with IEC 60068-2-38, max.</li> </ul>	100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation
<b>Resistance</b>	
<b>Coolants and lubricants</b>	
— Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air
<b>Use in stationary industrial systems</b>	
— 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)
<b>Use on ships/at sea</b>	
— 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)
<b>Usage in industrial process technology</b>	
— 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)
<b>Remark</b>	
— 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"> <li>• Coatings for printed circuit board assemblies acc. to EN 61086</li> <li>• Protection against fouling acc. to EN 60664-3</li> <li>• Military testing according to MIL-I-46058C, Amendment 7</li> <li>• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	<p>Yes; Class 2 for high reliability</p> <p>Yes; Type 1 protection</p> <p>Yes; Discoloration of coating possible during service life</p> <p>Yes; Conformal coating, Class A</p>
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	32 g
<b>last modified:</b>	10/8/2023 