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## Data sheet 6AG1431-0HH00-4AB0

SIPLUS S7-400 SM 431 16AI for medial exposure based on 6ES7431-0HH00-0AB0



Figure similar

| | |
|---|---|
| **Supply voltage** | |
| Load voltage L+ | |
| • Rated value (DC) | 24 V; Only required for supplying 2-wire transmitters |
| • Reverse polarity protection | Yes |
| **Input current** | |
| from load voltage L+ (without load), max. | 400 mA; for 16 connected, fully controlled 2-wire transmitters |
| from backplane bus 5 V DC, max. | 100 mA |
| **Power loss** | |
| Power loss, typ. | 2 W |
| **Analog inputs** | |
| Number of analog inputs | 16 |
| • For voltage/current measurement | 16 |
| permissible input voltage for voltage input (destruction limit), max. | 20 V; 20 V DC permanent, 75 V DC for max. 1 s (duty factor 1:20) |
| permissible input current for current input (destruction limit), max. | 40 mA |


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| | |
|---|---|
| **Input ranges** | |
| • Voltage | Yes |
| • Current | Yes |
| • Thermocouple | No |
| • Resistance thermometer | No |
| • Resistance | No |
| **Input ranges (rated values), voltages** | |
| • 1 V to 5 V | Yes |
| — Input resistance (1 V to 5 V) | 100 kΩ |
| • -1 V to +1 V | Yes |
| — Input resistance (-1 V to +1 V) | 10 MΩ |
| • -10 V to +10 V | Yes |
| — Input resistance (-10 V to +10 V) | 100 kΩ |
| **Input ranges (rated values), currents** | |
| • -20 mA to +20 mA | Yes |
| — Input resistance (-20 mA to +20 mA) | 50 Ω |
| • 4 mA to 20 mA | Yes |
| — Input resistance (4 mA to 20 mA) | 50 Ω |
| **Cable length** | |
| • shielded, max. | 200 m |

## Analog value generation for the inputs

| | |
|---|---|
| **Integration and conversion time/resolution per channel** | |
| • Resolution with overrange (bit including sign), max. | 13 bit |
| • Integration time, parameterizable | Yes |
| • Basic conversion time (ms) | 55 / 65 ms |
| • Integration time (ms) | 50 / 60 ms |
| • Interference voltage suppression for interference frequency f1 in Hz | 50 / 60 Hz |

## Encoder

| | |
|---|---|
| **Connection of signal encoders** | |
| • for voltage measurement | Yes; possible |
| • for current measurement as 4-wire transducer | Yes |

## Errors/accuracies

| | |
|---|---|
| **Operational error limit in overall temperature range** | |
| • Voltage, relative to input range, (+/-) | 0.65 %; 1.0 % at 1 to 5 V; 0.65 % at ±1 V, ±10 V |
| • Current, relative to input range, (+/-) | 0.65 % |
| **Basic error limit (operational limit at 25 °C)** | |
| • Voltage, relative to input range, (+/-) | 0.25 %; 0.5% at 1 to 5 V; 0.25% at ±1 V, ±10 V |
| • Current, relative to input range, (+/-) | 0.25 %; at ±20 mA, 4 to 20 mA |


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| | |
|---|---|
| **Interrupts/diagnostics/status information** | |
| Diagnostics function | No |
| **Potential separation** | |
| Potential separation analog inputs | |
| • Potential separation analog inputs | No |
| • between the channels | No |
| • between the channels and backplane bus | No |
| • Between the channels and load voltage L+ | No |
| **Isolation** | |
| Isolation tested with | 500 V DC between bus and local ground |
| **Ambient conditions** | |
| Ambient temperature during operation | |
| • min. | 0 °C; = Tmin |
| • max. | 60 °C; = Tmax |
| Ambient temperature during storage/transportation | |
| • min. | -40 °C |
| • max. | 70 °C |
| 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 1 140 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 | |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) |
| Resistance | |
| 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, * |
| 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; * |
| Usage in industrial process technology | |


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| | |
|---|---|
| — 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 availability |
| • 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 | 25 mm |
| Height | 290 mm |
| Depth | 210 mm |

| Weights | |
|---|---|
| Weight, approx. | 500 g |

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