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## Data sheet 6AG1135-6HD00-7BA1



Figure similar

SIPLUS ET 200SP AQ 4xU/I Standard based on 6ES7135-6HD00-0BA1 with conformal coating, -40…+70 °C, analog output module, suitable for BU type A0, A1, color code CC00, channel diagnostics, 16-bit, +/-0.3%

| | |
|---|---|
| **General information** | |
| Product type designation | AQ 4xU/I ST |
| Firmware version | |
| ● FW update possible | Yes |
| based on | 6ES7135-6HD00-0BA1 |
| usable BaseUnits | BU type A0, A1 |
| Color code for module-specific color-coded label | CC00 |
| Product function | |
| ● I&M data | Yes; I&M0 to I&M3 |
| ● Isochronous mode | No |
| ● Output range scalable | No |
| Engineering with | |
| ● STEP 7 TIA Portal configurable/integrated from version | see entry ID: 109746275 |
| Operating mode | |
| ● Oversampling | No |
| ● MSO | No |
| **CiR - Configuration in RUN** | |
| Reparameterization possible in RUN | No |
| 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, max. | 150 mA |
| **Power loss** | |
| Power loss, typ. | 1.5 W |
| **Address area** | |
| Address space per module | |
| ● Address space per module, max. | 8 byte; + 1 byte for QI information |
| **Hardware configuration** | |
| Automatic encoding | Yes |
| ● Mechanical coding element | Yes |
| ● Type of mechanical coding element | Type A |
| **Analog outputs** | |
| Number of analog outputs | 4; > +60 °C max. 2x ±10 V permissible |
| Voltage output, short-circuit current, max. | 45 mA |


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| Cycle time (all channels), min. | 5 ms |
| Analog output with oversampling | No |
| Output ranges, voltage | |
| ● 0 to 10 V | Yes; 15 bit |
| ● 1 V to 5 V | Yes; 13 bit |
| ● -5 V to +5 V | Yes; 15 bit incl. sign |
| ● -10 V to +10 V | Yes; 16 bit incl. sign |
| Output ranges, current | |
| ● 0 to 20 mA | Yes; 15 bit |
| ● -20 mA to +20 mA | Yes; 16 bit incl. sign |
| ● 4 mA to 20 mA | Yes; 14 bit |
| Connection of actuators | |
| ● for voltage output two-wire connection | Yes |
| ● for voltage output four-wire connection | Yes |
| ● for current output two-wire connection | Yes |
| Load impedance (in rated range of output) | |
| ● with voltage outputs, min. | 2 kΩ |
| ● with voltage outputs, capacitive load, max. | 1 µF |
| ● with current outputs, max. | 500 Ω |
| ● with current outputs, inductive load, max. | 1 mH |
| Destruction limits against externally applied voltages and currents | |
| ● Voltages at the outputs | 30 V |
| Cable length | |
| ● shielded, max. | 1 000 m; 200 m for voltage output |
| **Analog value generation for the outputs** | |
| Integration and conversion time/resolution per channel | |
| ● Resolution with overrange (bit including sign), max. | 16 bit |
| Settling time | |
| ● for resistive load | 0.1 ms |
| ● for capacitive load | 1 ms |
| ● for inductive load | 0.5 ms |
| **Errors/accuracies** | |
| Linearity error (relative to output range), (+/-) | 0.03 % |
| Temperature error (relative to output range), (+/-) | 0.005 %/K |
| Crosstalk between the outputs, min. | -50 dB |
| Repeat accuracy in steady state at 25 °C (relative to output range), (+/-) | 0.05 % |
| Operational error limit in overall temperature range | |
| ● Voltage, relative to output range, (+/-) | 1 % |
| ● Current, relative to output range, (+/-) | 1 % |
| Basic error limit (operational limit at 25 °C) | |
| ● Voltage, relative to output range, (+/-) | 0.3 % |
| ● Current, relative to output range, (+/-) | 0.3 % |
| **Interrupts/diagnostics/status information** | |
| Diagnostics function | Yes |
| Substitute values connectable | Yes |
| Alarms | |
| ● Diagnostic alarm | Yes |
| Diagnoses | |
| ● Monitoring the supply voltage | Yes |
| ● Wire break | Yes; module-by-module, only for output type "current" |
| ● Short-circuit | Yes; module-by-module, only for output type "voltage" |
| ● Group error | Yes |
| ● Overflow/Underflow | Yes; module-wise |
| Diagnostics indication LED | |
| ● Monitoring of the supply voltage (PWR-LED) | Yes; green PWR LED |
| ● Channel status display | Yes; green LED |
| ● for channel diagnostics | No |
| ● for module diagnostics | Yes; green/red DIAG LED |


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| **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 |
| **Isolation** | |
| Isolation tested with | 707 V DC (type test) |
| **Ambient conditions** | |
| Ambient temperature during operation | |
| ● horizontal installation, min. | -40 °C; = Tmin (incl. condensation/frost) |
| ● horizontal installation, max. | 70 °C; = Tmax; > +60 °C max. 2x ±10 V permissible |
| ● vertical installation, min. | -40 °C; = Tmin |
| ● 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 1 140 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 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 | |
| ● 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 |


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| Depth | 58 mm |

**Weights**

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|---|---|
| Weight, approx. | 31 g |

**Classifications**

| | Version | Classification |
|---|---|---|
| eClass | 16 | 27-24-26-01 |
| 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**

Manufacturer Declaration

China RoHS

| General Product Approval | EMV | For use in hazardous locations |
|---|---|---|

CCC-Ex

| For use in hazardous locations | Maritime application |
|---|---|

CCC-Ex

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