SIEMENS

## Data sheet 6ES7135-6HB00-0CA1



SIMATIC ET 200SP, Analog output module, AQ 2x U/I High Feature suitable for BU type A0, A1, Color code CC00, channel diagnostics, 16 bit, +/-0.1%

| | |
|---|---|
| **General information** | |
| Product type designation | AQ 2xU/I HF |
| HW functional status | from FS21 |
| Firmware version | V1.0.3 |
| ● FW update possible | Yes |
| 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 | Yes; 250 µs |
| Engineering with | |
| ● STEP 7 TIA Portal configurable/integrated from version | V13 / V13 |
| ● STEP 7 configurable/integrated from version | V5.5 SP3 / - |
| ● PCS 7 configurable/integrated from version | V8.1 SP1 |
| ● PROFIBUS from GSD version/GSD revision | GSD Revision 5 |
| ● PROFINET from GSD version/GSD revision | GSDML V2.3 |
| 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 (rated value) | 45 mA; without load |
| Current consumption, max. | 90 mA; 2 channels current output 20 mA |
| **Power loss** | |
| Power loss, typ. | 0.9 W |
| **Address area** | |
| Address space per module | |
| ● Address space per module, max. | 4 byte; + 1 byte for QI information |
| **Hardware configuration** | |


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|---|---|
| Automatic encoding | Yes |
| ● Mechanical coding element | Yes |
| ● Type of mechanical coding element | Type A |
| **Analog outputs** | |
| Number of analog outputs | 2 |
| Voltage output, short-circuit protection | Yes |
| Voltage output, short-circuit current, max. | 45 mA |
| Cycle time (all channels), min. | 750 µs |
| 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 | 0.05 ms |
| ● for capacitive load | 0.05 ms; Max. 47 nF and 20 m cable length |
| ● for inductive load | 0.05 ms |
| **Errors/accuracies** | |
| Output ripple (relative to output range, bandwidth 0 to 50 kHz), (+/-) | 0.02 % |
| Linearity error (relative to output range), (+/-) | 0.03 % |
| Temperature error (relative to output range), (+/-) | 0.003 %/K |
| Crosstalk between the outputs, max. | -50 dB |
| Repeat accuracy in steady state at 25 °C (relative to output range), (+/-) | 0.03 % |
| Operational error limit in overall temperature range | |
| ● Voltage, relative to output range, (+/-) | 0.2 % |
| ● Current, relative to output range, (+/-) | 0.2 % |
| Basic error limit (operational limit at 25 °C) | |
| ● Voltage, relative to output range, (+/-) | 0.1 % |
| ● Current, relative to output range, (+/-) | 0.1 % |
| **Isochronous mode** | |
| Execution and activation time (TCO), min. | 500 µs |
| Bus cycle time (TDP), min. | 750 µs |
| Jitter, max. | 5 µs |
| **Interrupts/diagnostics/status information** | |
| Diagnostics function | Yes |
| Substitute values connectable | Yes |
| Alarms | |


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|---|---|
| ● Diagnostic alarm | Yes |
| Diagnoses | |
| ● Monitoring the supply voltage | Yes |
| ● Wire break | Yes; channel-by-channel, only for output type "current" |
| ● Short-circuit | Yes; channel-by-channel, only for output type "voltage" |
| ● 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 DIAG 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 |
| **Isolation** | |
| Isolation tested with | 707 V DC (type test) |
| **Standards, approvals, certificates** | |
| Ecological footprint | |
| ● environmental product declaration | Yes |
| Global warming potential | |
| — global warming potential, (total) [CO2 eq] | 28.6 kg |
| — global warming potential, (during production) [CO2 eq] | 5.33 kg |
| — global warming potential, (during operation) [CO2 eq] | 23.6 kg |
| — global warming potential, (after end of life cycle) [CO2 eq] | -0.343 kg |
| **Ambient conditions** | |
| Ambient temperature during operation | |
| ● horizontal installation, min. | -30 °C; < 0 °C as of FS04 |
| ● horizontal installation, max. | 60 °C |
| ● vertical installation, min. | -30 °C; < 0 °C as of FS04 |
| ● vertical installation, max. | 50 °C |
| Altitude during operation relating to sea level | |
| ● Installation altitude above sea level, max. | 5 000 m; restrictions for installation altitudes > 2 000 m, see ET 200SP System Manual |
| Absolute humidity | |
| ● dew point, min. | -60 °C; suitable for dry room applications |
| **Dimensions** | |
| Width | 15 mm |
| Height | 73 mm |
| Depth | 58 mm |
| **Weights** | |
| 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 |


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|---|---|---|
| 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

Miscellaneous | Manufacturer Declaration | Metrological Approval

### General Product Approval

China RoHS

### For use in hazardous locations

FM | CCC-Ex | Type Examination Certificate

### For use in hazardous locations

Miscellaneous | CCC-Ex

### Maritime application

### Maritime application

NK / Nippon Kaiji Kyokai | CCS (China Classification Society) | KR (Korean Register of Shipping)

### Environment

### Environment

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