



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 | |
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| Product type designation | AQ 2xU/I HF |
| HW functional status | from FS04 |
| 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 |
| Engineering with | |
| <ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version | V13 / V13 |
| <ul style="list-style-type: none"> STEP 7 configurable/integrated from version | V5.5 SP3 / - |
| <ul style="list-style-type: none"> PCS 7 configurable/integrated from version | V8.1 SP1 |
| <ul style="list-style-type: none"> PROFIBUS from GSD version/GSD revision | GSD Revision 5 |
| <ul style="list-style-type: none"> PROFINET from GSD version/GSD revision | GSDML V2.3 |
| Operating mode | |
| <ul style="list-style-type: none"> Oversampling | No |
| <ul style="list-style-type: none"> MSO | No |
| CiR - Configuration in RUN | |
| Reparameterization possible in RUN | Yes |
| Calibration possible in RUN | Yes |
| 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 | |
| <ul style="list-style-type: none"> Address space per module, max. | 4 byte; + 1 byte for QI information |
| Hardware configuration | |
| Automatic encoding | |
| <ul style="list-style-type: none"> Mechanical coding element | Yes |
| <ul style="list-style-type: none"> Type of mechanical coding element | Type A |
| Analog outputs | |
| Number of analog outputs | 2 |
| Voltage output, short-circuit protection | Yes |

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| Voltage output, short-circuit current, max. | 45 mA |
| Cycle time (all channels), min. | 750 μ s |
| 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 k Ω |
| • with voltage outputs, capacitive load, max. | 1 μ F |
| • 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 μ s |
| Bus cycle time (TDP), min. | 750 μ s |
| Jitter, max. | 5 μ s |
| Interrupts/diagnostics/status information | |
| Diagnostics function | Yes |
| Substitute values connectable | Yes |
| Alarms | |
| • 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 |
| 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)

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 manual

Dimensions

| | |
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| Width | 15 mm |
| Height | 73 mm |
| Depth | 58 mm |

Weights

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| Weight, approx. | 31 g |
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last modified: 8/16/2023 