# SIEMENS

**Data sheet**                                                   **6ES7532-5ND00-0AB0**

SIMATIC S7-1500, analog output module AQ 4xU/I HF, 16-bit resolution accuracy 0.1%, 4 channels in groups of 1, common mode voltage: 30 V AC/60 V DC, diagnostics; substitute value, isochronous mode; the module supports the safety-oriented shutdown of load groups up to SIL2 according to EN IEC 62061:2021 and Category 3 / PL d according to EN ISO 13849-1:2015. delivery including infeed element, shielding bracket and shield terminal: front connector (screw terminals or push-in) to be ordered separately

| General information | |
|---|---|
| Product type designation | AQ 4xU/I HF |
| HW functional status | From FS01 |
| Firmware version | V1.1.0 |
| ● FW update possible | Yes |
| Product function | |
| ● I&M data | Yes; I&M0 to I&M3 |
| ● Isochronous mode | Yes |
| ● Prioritized startup | Yes |
| Engineering with | |
| ● STEP 7 TIA Portal configurable/integrated from version | V14 / - |
| ● STEP 7 configurable/integrated from version | V5.5 SP3 / - |
| ● PROFIBUS from GSD version/GSD revision | V1.0 / V5.1 |
| ● PROFINET from GSD version/GSD revision | V2.3 / - |
| Operating mode | |
| ● Oversampling | No |
| ● MSO | Yes |
| **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, max. | 160 mA |
| **Power** | |
| Power available from the backplane bus | 0.95 W |
| **Power loss** | |
| Power loss, typ. | 5 W |
| **Analog outputs** | |
| Number of analog outputs | 4 |
| Voltage output, short-circuit protection | Yes |
| Voltage output, short-circuit current, max. | 24 mA |
| Current output, no-load voltage, max. | 22 V |
| Cycle time (all channels), min. | 125 µs; independent of number of activated channels |
| Output ranges, voltage | |
| ● 0 to 10 V | Yes |

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| | |
|---|---|
| ● 1 V to 5 V | Yes |
| ● -5 V to +5 V | No |
| ● -10 V to +10 V | Yes |
| **Output ranges, current** | |
| ● 0 to 20 mA | Yes |
| ● -20 mA to +20 mA | Yes |
| ● 4 mA to 20 mA | Yes |
| **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. | 1 kΩ; 0.5 kOhm at 1 to 5 V |
| ● with voltage outputs, capacitive load, max. | 1 µF |
| ● with current outputs, max. | 750 Ω |
| ● with current outputs, inductive load, max. | 10 mH |
| **Cable length** | |
| ● shielded, max. | 800 m; for current, 200 m for voltage |
| **Analog value generation for the outputs** | |
| **Integration and conversion time/resolution per channel** | |
| ● Resolution with overrange (bit including sign), max. | 16 bit |
| ● Conversion time (per channel) | 125 µs; independent of number of activated channels |
| **Settling time** | |
| ● for resistive load | 0.2 ms; see additional description in the manual |
| ● for capacitive load | 1.8 ms; see additional description in the manual |
| ● for inductive load | 2 ms; see additional description in the manual |
| **Errors/accuracies** | |
| Output ripple (relative to output range, bandwidth 0 to 50 kHz), (+/-) | 0.02 % |
| Linearity error (relative to output range), (+/-) | 0.015 % |
| Temperature error (relative to output range), (+/-) | 0.002 %/K |
| Crosstalk between the outputs, max. | -100 dB |
| Repeat accuracy in steady state at 25 °C (relative to output range), (+/-) | 0.005 % |
| note regarding accuracy | at temperatures below 0 °C, the figures for operating error and temperature error are doubled |
| **Operational error limit in overall temperature range** | |
| ● Voltage, relative to output range, (+/-) | ±10 V; 0 V to 10 V: ±0.12%; 1 V to 5 V: ±0.1% |
| ● Current, relative to output range, (+/-) | ±20 mA; 0 mA to 20 mA: ±0.2%; 4 mA to 20 mA: ±0.12% |
| **Basic error limit (operational limit at 25 °C)** | |
| ● Voltage, relative to output range, (+/-) | 0.06 % |
| ● Current, relative to output range, (+/-) | 0.1 % |
| **Isochronous mode** | |
| Execution and activation time (TCO), min. | 100 µs |
| Bus cycle time (TDP), min. | 250 µs |
| **Interrupts/diagnostics/status information** | |
| Diagnostics function | Yes |
| Substitute values connectable | Yes |
| **Alarms** | |
| ● Diagnostic alarm | Yes |
| **Diagnoses** | |
| ● Monitoring the supply voltage | Yes |
| ● Wire-break | Yes; Only for output type "current" |
| ● Short-circuit | Yes; Only for output type "voltage" |
| ● Overflow/underflow | Yes |
| **Diagnostics indication LED** | |
| ● RUN LED | Yes; green LED |
| ● ERROR LED | Yes; red LED |
| ● Monitoring of the supply voltage (PWR-LED) | Yes; green LED |
| ● Channel status display | Yes; green LED |
| ● for channel diagnostics | Yes; red LED |
| ● for module diagnostics | Yes; red LED |
| **Potential separation** | |

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| Potential separation channels | |
|---|---|
| ● between the channels | Yes |
| ● between the channels, in groups of | 1 |
| ● between the channels and backplane bus | Yes |
| ● Between the channels and load voltage L+ | Yes |

| Permissible potential difference | |
|---|---|
| between different circuits | 60 V DC/30 V AC; insulation rated for 120 V AC basic insulation: between the channels and the supply voltage L+; between the channels and the backplane bus; between the channels |

| Isolation | |
|---|---|
| Isolation tested with | 2 000 V DC between the channels and the supply voltage L+; 2 000 V DC between the channels and the backplane bus; 2 000 V DC between the channels; 707 V DC (type test) between the supply voltage L+ and the backplane bus |

| Standards, approvals, certificates | |
|---|---|
| Suitable for safety-related tripping of standard modules | Yes; From FS03 |
| Highest safety class achievable for safety-related tripping of standard modules | |
| ● Performance level according to ISO 13849-1 | PL d |
| ● Category according to ISO 13849-1 | Cat. 3 |
| ● SIL acc. to IEC 62061 | SIL 2 |
| ● remark on safety-oriented shutdown | https://support.industry.siemens.com/cs/de/de/view/39198632 |

| Ambient conditions | |
|---|---|
| Ambient temperature during operation | |
| ● horizontal installation, min. | -25 °C; From FS02 |
| ● horizontal installation, max. | 60 °C |
| ● vertical installation, min. | -25 °C; From FS02 |
| ● vertical installation, max. | 40 °C |

| Dimensions | |
|---|---|
| Width | 35 mm |
| Height | 147 mm |
| Depth | 129 mm |

| Weights | |
|---|---|
| Weight, approx. | 300 g |

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| **last modified:** | 4/27/2022 |

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