



SIMATIC S7-1200 G2: SM 1232 analog output, 8 AO; outputs: 8x AQ 14 bit DAC (+/-10 V, 0-20 mA or 4-20 mA)

Figure similar

| General information | |
|--|--|
| Product type designation | SM 1232, AQ 8x 14 bit |
| Supply voltage | |
| Rated value (DC) | 24 V |
| permissible range, lower limit (DC) | 20.4 V |
| permissible range, upper limit (DC) | 28.8 V |
| Input current | |
| Current consumption, typ. | 45 mA |
| from backplane bus 5 V DC, typ. | 90 mA |
| Power loss | |
| Power loss, typ. | 5.6 W |
| Analog outputs | |
| Number of analog outputs | 8; Current or voltage |
| Output ranges, voltage | |
| • -10 V to +10 V | Yes |
| Output ranges, current | |
| • 0 to 20 mA | Yes |
| • 4 mA to 20 mA | Yes |
| Load impedance (in rated range of output) | |
| • with voltage outputs, min. | 1 000 Ω |
| • with current outputs, max. | 600 Ω |
| Cable length | |
| • shielded, max. | 100 m; shielded, twisted pair |
| Analog value generation for the outputs | |
| Integration and conversion time/resolution per channel | |
| • Resolution with overrange (bit including sign), max. | 14 bit; Voltage: 14 bit; Current : 13 bit |
| Errors/accuracies | |
| Temperature error (relative to output range), (+/-) | 25 °C ±0.3 % / -20 °C to 60 °C ±0.6 % of the full-scale deflection |
| 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 |
| Alarms | |
| • Diagnostic alarm | Yes |
| Diagnoses | |
| • Monitoring the supply voltage | Yes |
| • Wire break | Yes |

| | |
|--|---|
| • Short-circuit | Yes |
| Diagnostics indication LED | |
| • DIAG LED | Yes |
| • for status of the outputs | Yes |
| Degree and class of protection | |
| IP degree of protection | IP20 |
| Standards, approvals, certificates | |
| Siemens Eco Profile (SEP) | Siemens EcoTech |
| CE mark | Yes |
| CSA approval | No |
| UL approval | Yes |
| cULus | Yes |
| FM approval | No |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| Marine approval | No |
| Ecological footprint | |
| • environmental product declaration | Yes; type 2 acc. to ISO 14021 |
| Global warming potential | |
| — global warming potential, (total) [CO2 eq] | 32.2 kg |
| — global warming potential, (during production) [CO2 eq] | 7.96 kg |
| — global warming potential, (during operation) [CO2 eq] | 24.5 kg |
| — global warming potential, (after end of life cycle) [CO2 eq] | -0.358 kg |
| Ambient conditions | |
| Free fall | |
| • Fall height, max. | 0.3 m; five times, in product package |
| Ambient temperature during operation | |
| • min. | -20 °C |
| • max. | 40 °C; at max. voltages and max. specifications |
| • horizontal installation, min. | -20 °C |
| • horizontal installation, max. | 60 °C; at rated voltages, 50 % of max. specification and alternate IO active |
| • vertical installation, min. | -20 °C |
| • vertical installation, max. | 50 °C; at rated voltages, 50 % of max. specification and alternate IO active |
| Ambient temperature during storage/transportation | |
| • min. | -40 °C |
| • max. | 70 °C |
| Air pressure acc. to IEC 60068-2-13 | |
| • Operation, min. | 540 hPa |
| • Operation, max. | 1 140 hPa |
| • Storage/transport, min. | 540 hPa |
| • Storage/transport, max. | 1 140 hPa |
| Altitude during operation relating to sea level | |
| • Installation altitude, min. | -1 000 m |
| • Installation altitude, max. | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual |
| Relative humidity | |
| • Operation at 25 °C without condensation, max. | 95 % |
| Vibrations | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | 3.5 mm from 5 - 8.4 Hz, 1g from 8.4 - 150 Hz |
| • Operation, tested according to IEC 60068-2-6 | Yes |
| Shock testing | |
| • tested according to IEC 60068-2-27 | Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms |
| Pollutant concentrations | |
| • SO2 at RH < 60% without condensation | SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60 % condensation-free |
| Connection method | |
| required front connector | No |

Mechanics/material

| | |
|----------------------------|-----|
| Enclosure material (front) | |
| • Plastic | Yes |

Dimensions

| | |
|--------|--------|
| Width | 30 mm |
| Height | 125 mm |
| Depth | 100 mm |

Weights

| | |
|-----------------|-------|
| Weight, approx. | 173 g |
|-----------------|-------|

Classifications

| | Version | Classification |
|--------|---------|----------------|
| eClass | 14 | 27-24-22-01 |
| eClass | 12 | 27-24-22-01 |
| eClass | 9.1 | 27-24-22-01 |
| eClass | 9 | 27-24-22-01 |
| eClass | 8 | 27-24-22-01 |
| eClass | 7.1 | 27-24-22-01 |
| eClass | 6 | 27-24-22-01 |
| ETIM | 10 | EC001420 |
| ETIM | 9 | EC001420 |
| ETIM | 8 | EC001420 |
| ETIM | 7 | EC001420 |

Approvals / Certificates

General Product Approval



[Miscellaneous](#)



General Product Approval **For use in hazardous locations**



[China RoHS](#)

[Manufacturer Declaration](#)



For use in hazardous locations **Test Certificates** **Maritime application**



[Miscellaneous](#)

[CCC-Ex](#)

[CCC-Ex](#)

[Type Test Certificates/Test Report](#)



Maritime application



[NK / Nippon Kaiji Kyokai](#)



[KR \(Korean Register of Shipping\)](#)

Environment



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