



Figure similar

SIMATIC S7-1200, Analog output, SM 1232, 4 AO, +/-10 V, 14-bit resolution, or 0-20 mA/4-20 mA, 13-bit resolution

| General information | |
|---|---|
| Product type designation | SM 1232, AQ 4x14 bit |
| Supply voltage | |
| Rated value (DC) | 24 V |
| Input current | |
| Current consumption, typ. | 45 mA |
| from backplane bus 5 V DC, typ. | 80 mA |
| Power loss | |
| Power loss, typ. | 1.5 W |
| Analog outputs | |
| Number of analog outputs | 4; Current or voltage |
| Output ranges, voltage | |
| • -10 V to +10 V | Yes |
| Output ranges, current | |
| • 0 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%, to 55 °C ±0.6% total measurement range |
| Basic error limit (operational limit at 25 °C) | |
| • Voltage, relative to output range, (+/-) | 0.3 % |
| • Current, relative to output range, (+/-) | 0.3 % |
| Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, $f_1 =$ interference frequency | |
| • Common mode voltage, max. | 12 V |
| Interrupts/diagnostics/status information | |
| Alarms | Yes |
| Diagnostics function | Yes |
| Alarms | |
| • Diagnostic alarm | Yes |
| Diagnoses | |
| • Monitoring the supply voltage | Yes |
| • Wire-break | Yes |
| • Short-circuit | Yes |

| | | |
|--|--|-----------------------|
| Diagnostics indication LED | | |
| • for status of the outputs | Yes | |
| • for maintenance | Yes | |
| Degree and class of protection | | |
| IP degree of protection | IP20 | |
| Standards, approvals, certificates | | |
| CE mark | Yes | |
| CSA approval | Yes | |
| UL approval | Yes | |
| cULus | Yes | |
| FM approval | Yes | |
| RCM (formerly C-TICK) | Yes | |
| KC approval | Yes | |
| Marine approval | Yes | |
| Ecological footprint | | |
| • environmental product declaration | Yes | |
| Global warming potential | | |
| — global warming potential, (total) [CO2 eq] | 36.4 kg | |
| — global warming potential, (during production) [CO2 eq] | 7.46 kg | |
| — global warming potential, (during operation) [CO2 eq] | 29.1 kg | |
| — global warming potential, (after end of life cycle) [CO2 eq] | -0.18 kg | |
| Ambient conditions | | |
| Free fall | | |
| • Fall height, max. | 0.3 m; five times, in product package | |
| Ambient temperature during operation | | |
| • min. | -20 °C | |
| • max. | 60 °C | |
| • horizontal installation, min. | -20 °C | |
| • horizontal installation, max. | 60 °C | |
| • vertical installation, min. | -20 °C | |
| • vertical installation, max. | 50 °C | |
| Ambient temperature during storage/transportation | | |
| • min. | -40 °C | |
| • max. | 70 °C | |
| Air pressure acc. to IEC 60068-2-13 | | |
| • Operation, min. | 795 hPa | |
| • Operation, max. | 1 080 hPa | |
| • Storage/transport, min. | 660 hPa | |
| • Storage/transport, max. | 1 080 hPa | |
| Relative humidity | | |
| • Operation at 25 °C without condensation, max. | 95 % | |
| 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 | Yes | |
| Mechanics/material | | |
| Enclosure material (front) | | |
| • Plastic | Yes | |
| Dimensions | | |
| Width | 45 mm | |
| Height | 100 mm | |
| Depth | 75 mm | |
| Weights | | |
| Weight, approx. | 180 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 | 9 | EC001420 |
| ETIM | 8 | EC001420 |
| ETIM | 7 | EC001420 |
| IDEA | 4 | 3562 |
| UNSPSC | 15 | 32-15-17-05 |

Approvals / Certificates

General Product Approval



[Manufacturer Declaration](#)

[Miscellaneous](#)



[Metrological Approval](#)

General Product Approval

EMV

For use in hazardous locations



[EM](#)



For use in hazardous locations

Marine / Shipping



[CCC-Ex](#)



[NK / Nippon Kaiji Kyokai](#)

Marine / Shipping

Environment



[CCS \(China Classification Society\)](#)



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