

SIPLUS S7-1200 SM 1234 4AI/2AQ for medial exposure with conformal coating based on 6ES7234-4HE32-0XB0 . analog I/O +/- 10 V: 14-bit resolution or 0-20mA: 13-bit resolution



Figure similar

| General information | |
|---|---|
| Product type designation | SM 1234, AI 4x13 bit/AQ 2x14 bit |
| Supply voltage | |
| Rated value (DC) | 24 V |
| Input current | |
| Current consumption, typ. | 60 mA |
| from backplane bus 5 V DC, typ. | 80 mA |
| Power loss | |
| Power loss, typ. | 2 W |
| Analog inputs | |
| Number of analog inputs | 4; Current or voltage differential inputs |
| permissible input voltage for voltage input (destruction limit), max. | 35 V |
| permissible input current for current input (destruction limit), max. | 40 mA |
| Cycle time (all channels) max. | 625 µs |

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|---|---|
| Input ranges | |
| • Voltage | Yes; $\pm 10\text{V}$, $\pm 5\text{V}$, $\pm 2.5\text{V}$ |
| • Current | Yes; 4 to 20 mA, 0 to 20 mA |
| • Thermocouple | No |
| • Resistance thermometer | No |
| • Resistance | No |
| Input ranges (rated values), voltages | |
| • -10 V to +10 V | Yes |
| — Input resistance (-10 V to +10 V) | $\geq 9\text{ MOhm}$ |
| • -2.5 V to +2.5 V | Yes |
| — Input resistance (-2.5 V to +2.5 V) | $\geq 9\text{ MOhm}$ |
| • -5 V to +5 V | Yes |
| — Input resistance (-5 V to +5 V) | $\geq 9\text{ MOhm}$ |
| Input ranges (rated values), currents | |
| • 0 to 20 mA | Yes |
| — Input resistance (0 to 20 mA) | $280\ \Omega$ |
| • 4 mA to 20 mA | Yes |
| Analog outputs | |
| Number of analog outputs | 2; 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. | $1\ 000\ \Omega$ |
| • with current outputs, max. | $600\ \Omega$ |
| Analog value generation for the inputs | |
| Measurement principle | Differential |
| Integration and conversion time/resolution per channel | |
| • Resolution with overrange (bit including sign), max. | 12 bit; + sign |
| • Integration time, parameterizable | Yes |
| • Interference voltage suppression for interference frequency f_1 in Hz | 40 dB, DC to 60 V for interference frequency 50 / 60 Hz |
| Smoothing of measured values | |
| • parameterizable | Yes |
| • Step: None | Yes |
| • Step: low | Yes |
| • Step: Medium | Yes |
| • Step: High | Yes |

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| Analog value generation for the outputs | |
| Integration and conversion time/resolution per channel | |
| • Resolution (incl. overrange) | Voltage: 14 bit; Current : 13 bit |
| Errors/accuracies | |
| Temperature error (relative to input range), (+/-) | 25 °C ±0.1%, to 55 °C ±0.2% total measurement range |
| 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 input range, (+/-) | 0.1 % |
| • Current, relative to input range, (+/-) | 0.1 % |
| • 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 inputs | Yes |
| • for status of the outputs | Yes |
| • for maintenance | Yes |
| Potential separation | |
| Potential separation analog outputs | |
| • between the channels and the power supply of the electronics | No |
| Degree and class of protection | |
| IP degree of protection | IP20 |
| Ambient conditions | |
| Free fall | |
| • Fall height, max. | 0.3 m; five times, in product package |
| Ambient temperature during operation | |
| • min. | -20 °C; = Tmin (incl. condensation/frost); start-up @ 0 °C |
| • max. | 60 °C; = Tmax |
| Ambient temperature during storage/transportation | |
| • min. | -40 °C |

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|---|---|
| • max. | 70 °C |
| Altitude during operation relating to sea level | |
| • Installation altitude above sea level, max. | 5 000 m |
| • Ambient air temperature-barometric pressure-altitude | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m) |
| Relative humidity | |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) |
| Resistance | |
| Coolants and lubricants | |
| — Resistant to commercially available coolants and lubricants | Yes; Incl. diesel and oil droplets in the air |
| Use in stationary industrial systems | |
| — to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request |
| — to chemically active substances according to EN 60721-3-3 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |
| — to mechanically active substances according to EN 60721-3-3 | Yes; Class 3S4 incl. sand, dust, * |
| Use on ships/at sea | |
| — to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request |
| — to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |
| — to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * |
| Usage in industrial process technology | |
| — Against chemically active substances acc. to EN 60654-4 | Yes; Class 3 (excluding trichlorethylene) |
| — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) |
| Remark | |
| — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! |
| Conformal coating | |
| • Coatings for printed circuit board assemblies acc. to EN 61086 | Yes; Class 2 for high reliability |
| • Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection |
| • Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life |

- Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A

Yes; Conformal coating, Class A

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.

220 g

last modified:

10/13/2020