

SIPLUS S7-1200 SM 1234 4AI/2AQ -25...+70 °C with conformal coating based on 6ES7234-4HE32-0XB0 . analog I/O +/-10 V: 14-bit resolution 0-20 mA: 13-bit resolution



Figure similar

| General information | |
|---|---|
| Product type designation | SM 1234, AI 4x13 bit/AQ 2x14 bit |
| Supply voltage | |
| Rated value (DC) | Yes |
| • 24 V DC | |
| 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 current input (destruction limit), max. | ± 35 V |
| permissible input voltage for voltage input (destruction limit), max. | 35 V |

| | |
|--|---|
| permissible input current for voltage input (destruction limit), max. | 40 mA |
| permissible input current for current input (destruction limit), max. | 40 mA |
| Cycle time (all channels) max. | 625 μ s |
| Input ranges | |
| • Voltage | Yes; ± 10 V, ± 5 V, ± 2.5 V |
| • Current | Yes; 4 to 20 mA, 0 to 20 mA |
| Input ranges (rated values), voltages | |
| • -10 V to +10 V | Yes |
| • Input resistance (-10 V to +10 V) | ≥ 9 MOhm |
| • -2.5 V to +2.5 V | Yes |
| • Input resistance (-2.5 V to +2.5 V) | ≥ 9 MOhm |
| • -5 V to +5 V | Yes |
| • Input resistance (-5 V to +5 V) | ≥ 9 MOhm |
| Input ranges (rated values), currents | |
| • 0 to 20 mA | Yes |
| • Input resistance (0 to 20 mA) | 280 Ω |
| • 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 Ω |
| • with current outputs, max. | 600 Ω |
| 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 f1 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

Analog value generation for the outputs

Integration and conversion time/resolution per channel

- Resolution (incl. overrange)

Voltage: 14 bits; Current : 13 bits

Errors/accuracies

Temperature error (relative to input range), (+/-)

25 °C ±0.1 % / -40 °C to 70 °C ±0.28 % of the full-scale deflection

Temperature error (relative to output range), (+/-)

25 °C ±0.3 % / -40 °C to 70 °C ±0.85 % of the full-scale deflection

Basic error limit (operational limit at 25 °C)

- Voltage, relative to input range, (+/-)
- Current, relative to input range, (+/-)
- Voltage, relative to output range, (+/-)
- Current, relative to output range, (+/-)

0.1 %

0.1 %

0.3 %

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

Diagnostic functions

Yes

Alarms

- Diagnostic alarm

Yes

Diagnostic messages

- Monitoring the supply voltage
- Wire-break
- Short-circuit

Yes

Yes

Yes

Diagnostics indication LED

- for status of the inputs
- for status of the outputs
- for maintenance

Yes

Yes

Yes

Potential separation

Potential separation analog outputs

- between the channels and the power supply of the electronics

No

Degree and class of protection

Degree of protection acc. to EN 60529

- IP20

Yes

Standards, approvals, certificates

CE mark

Yes

Ambient conditions

Free fall

- Fall height, max.

0.3 m; five times, in product package

Ambient temperature during operation

| | |
|---|--|
| <ul style="list-style-type: none"> • min. • max. | <p>-40 °C; = Tmin; Startup @ -25 °C</p> <p>70 °C; = Tmax; Tmax > +60 °C number of simultaneously used outputs 1, inputs 2 (no adjacent points) for horizontal mounting position</p> |
| Ambient temperature during storage/transportation | |
| <ul style="list-style-type: none"> • min. • max. | <p>-40 °C</p> <p>70 °C</p> |
| Altitude during operation relating to sea level | |
| <ul style="list-style-type: none"> • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude | <p>5 000 m</p> <p>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)</p> |
| Relative humidity | |
| <ul style="list-style-type: none"> • With condensation, tested in accordance with IEC 60068-2-38, max. | <p>100 %; RH incl. condensation/frost (no commissioning under condensation conditions)</p> |
| Resistance | |
| Coolants and lubricants | |
| <ul style="list-style-type: none"> — Resistant to commercially available coolants and lubricants | <p>Yes</p> |
| Use in stationary industrial systems | |
| <ul style="list-style-type: none"> — to biologically active substances according to EN 60721-3-3 — to chemically active substances according to EN 60721-3-3 — to mechanically active substances according to EN 60721-3-3 | <p>Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request</p> <p>Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *</p> <p>Yes; Class 3S4 incl. sand, dust, *</p> |
| Use on ships/at sea | |
| <ul style="list-style-type: none"> — to biologically active substances according to EN 60721-3-6 — to chemically active substances according to EN 60721-3-6 — to mechanically active substances according to EN 60721-3-6 | <p>Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request</p> <p>Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *</p> <p>Yes; Class 6S3 incl. sand, dust; *</p> |
| from supply voltage 1L+ | |
| <ul style="list-style-type: none"> — Note regarding classification of environmental conditions acc. to EN 60721 | <p>* The supplied plug covers must remain in place over the unused interfaces during operation!</p> |
| Connection method | |
| <ul style="list-style-type: none"> required front connector | <p>Yes</p> |
| Mechanics/material | |
| <ul style="list-style-type: none"> Enclosure material (front) <ul style="list-style-type: none"> • Plastic | <p>Yes</p> |
| Dimensions | |

| | |
|-----------------------|------------|
| Width | 45 mm |
| Height | 100 mm |
| Depth | 75 mm |
| Weights | |
| Weight, approx. | 220 g |
| last modified: | 05/16/2018 |