



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                                                                                     |                                                            |
| <ul style="list-style-type: none"><li>• for status of the outputs</li></ul>                                    | Yes                                                        |
| <ul style="list-style-type: none"><li>• for maintenance</li></ul>                                              | 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                                                                                           |                                                            |
| <ul style="list-style-type: none"><li>• environmental product declaration</li></ul>                            | Yes                                                        |
| Global warming potential                                                                                       |                                                            |
| <ul style="list-style-type: none"><li>— global warming potential, (total) [CO2 eq]</li></ul>                   | 36.4 kg                                                    |
| <ul style="list-style-type: none"><li>— global warming potential, (during production) [CO2 eq]</li></ul>       | 7.46 kg                                                    |
| <ul style="list-style-type: none"><li>— global warming potential, (during operation) [CO2 eq]</li></ul>        | 29.1 kg                                                    |
| <ul style="list-style-type: none"><li>— global warming potential, (after end of life cycle) [CO2 eq]</li></ul> | -0.18 kg                                                   |
| Ambient conditions                                                                                             |                                                            |
| Free fall                                                                                                      |                                                            |
| <ul style="list-style-type: none"><li>• Fall height, max.</li></ul>                                            | 0.3 m; five times, in product package                      |
| Ambient temperature during operation                                                                           |                                                            |
| <ul style="list-style-type: none"><li>• min.</li></ul>                                                         | -20 °C                                                     |
| <ul style="list-style-type: none"><li>• max.</li></ul>                                                         | 60 °C                                                      |
| <ul style="list-style-type: none"><li>• horizontal installation, min.</li></ul>                                | -20 °C                                                     |
| <ul style="list-style-type: none"><li>• horizontal installation, max.</li></ul>                                | 60 °C                                                      |
| <ul style="list-style-type: none"><li>• vertical installation, min.</li></ul>                                  | -20 °C                                                     |
| <ul style="list-style-type: none"><li>• vertical installation, max.</li></ul>                                  | 50 °C                                                      |
| Ambient temperature during storage/transportation                                                              |                                                            |
| <ul style="list-style-type: none"><li>• min.</li></ul>                                                         | -40 °C                                                     |
| <ul style="list-style-type: none"><li>• max.</li></ul>                                                         | 70 °C                                                      |
| Air pressure acc. to IEC 60068-2-13                                                                            |                                                            |
| <ul style="list-style-type: none"><li>• Operation, min.</li></ul>                                              | 795 hPa                                                    |
| <ul style="list-style-type: none"><li>• Operation, max.</li></ul>                                              | 1 080 hPa                                                  |
| <ul style="list-style-type: none"><li>• Storage/transport, min.</li></ul>                                      | 660 hPa                                                    |
| <ul style="list-style-type: none"><li>• Storage/transport, max.</li></ul>                                      | 1 080 hPa                                                  |
| Relative humidity                                                                                              |                                                            |
| <ul style="list-style-type: none"><li>• Operation at 25 °C without condensation, max.</li></ul>                | 95 %                                                       |
| Pollutant concentrations                                                                                       |                                                            |
| <ul style="list-style-type: none"><li>• SO2 at RH &lt; 60% without condensation</li></ul>                      | SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free |
| connection method                                                                                              |                                                            |
| required front connector                                                                                       | Yes                                                        |
| Mechanics/material                                                                                             |                                                            |
| Enclosure material (front)                                                                                     | Yes                                                        |
| <ul style="list-style-type: none"><li>• Plastic</li></ul>                                                      |                                                            |
| Dimensions                                                                                                     |                                                            |
| Width                                                                                                          | 45 mm                                                      |
| Height                                                                                                         | 100 mm                                                     |
| Depth                                                                                                          | 75 mm                                                      |
| Weights                                                                                                        |                                                            |
| Weight, approx.                                                                                                | 180 g                                                      |

last modified:

10/9/2024 