

\*\*\*Spare part\*\*\* SIMATIC S7-200, Analog input EM 231, only for S7-22X CPU, 4 AI, 0-10V DC, 12 bit converter



| Input current                                                         |               |
|-----------------------------------------------------------------------|---------------|
| from load voltage L+ (without load), max.                             | 60 mA         |
| from backplane bus 5 V DC, max.                                       | 20 mA         |
| Power loss                                                            |               |
| Power loss, typ.                                                      | 2 W           |
| Analog inputs                                                         |               |
| Number of analog inputs                                               | 4; Difference |
| permissible input voltage for voltage input (destruction limit), max. | 30 V          |
| permissible input current for current input (destruction limit), max. | 32 mA         |
| Input ranges                                                          |               |
| • Voltage                                                             | Yes           |
| • Current                                                             | Yes           |
| • Thermocouple                                                        | No            |
| • Resistance thermometer                                              | No            |
| • Resistance                                                          | No            |
| Input ranges (rated values), voltages                                 |               |

|                                                                                                 |                                                         |
|-------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| • 0 to +5 V                                                                                     | Yes                                                     |
| • Input resistance (0 to 5 V)                                                                   | 10 MΩ                                                   |
| • 0 to +10 V                                                                                    | Yes                                                     |
| • Input resistance (0 to 10 V)                                                                  | 10 MΩ                                                   |
| • -2.5 V to +2.5 V                                                                              | Yes                                                     |
| • Input resistance (-2.5 V to +2.5 V)                                                           | 10 MΩ                                                   |
| • -5 V to +5 V                                                                                  | Yes                                                     |
| • Input resistance (-5 V to +5 V)                                                               | 10 MΩ                                                   |
| Input ranges (rated values), currents                                                           |                                                         |
| • 0 to 20 mA                                                                                    | Yes                                                     |
| • Input resistance (0 to 20 mA)                                                                 | 10 MΩ                                                   |
| Thermocouple (TC)                                                                               |                                                         |
| Temperature compensation                                                                        |                                                         |
| — parameterizable                                                                               | No                                                      |
| Cable length                                                                                    |                                                         |
| • shielded, max.                                                                                | 100 m; to the sensor                                    |
| Analog value generation for the inputs                                                          |                                                         |
| Integration and conversion time/resolution per channel                                          |                                                         |
| • Resolution with overrange (bit including sign), max.                                          | 12 bit                                                  |
| • Interference voltage suppression for interference frequency f1 in Hz                          | 40 dB, DC to 60 V for interference frequency 50 / 60 Hz |
| • Conversion time (per channel)                                                                 | 250 μs                                                  |
| Displayable conversion value range                                                              |                                                         |
| • bipolar signals                                                                               | -32 000 to +32 000                                      |
| • unipolar signals                                                                              | 0 to 32 000                                             |
| Errors/accuracies                                                                               |                                                         |
| Interference voltage suppression for $f = n \times (f1 \pm 1 \%)$ , f1 = interference frequency |                                                         |
| • Common mode voltage, max.                                                                     | 12 V                                                    |
| Interrupts/diagnostics/status information                                                       |                                                         |
| Diagnostics indication LED                                                                      |                                                         |
| • external fault EXTF (red)                                                                     | Yes                                                     |
| Potential separation                                                                            |                                                         |
| Potential separation analog inputs                                                              |                                                         |
| • Potential separation analog inputs                                                            | No                                                      |
| Connection method                                                                               |                                                         |
| Plug-in I/O terminals                                                                           | No                                                      |
| Dimensions                                                                                      |                                                         |
| Width                                                                                           | 71.2 mm                                                 |
| Height                                                                                          | 80 mm                                                   |

|                       |            |
|-----------------------|------------|
| Depth                 | 62 mm      |
| Weights               |            |
| Weight, approx.       | 183 g      |
| <b>last modified:</b> | 03/02/2019 |