



SIMATIC S7-400, analog output SM 432, isolated 8 AO; resolution 13 bit, U/I

| Supply voltage                                         |                                                                            |
|--------------------------------------------------------|----------------------------------------------------------------------------|
| Load voltage L+                                        |                                                                            |
| • Rated value (DC)                                     | 24 V                                                                       |
| • Reverse polarity protection                          | Yes                                                                        |
| Input current                                          |                                                                            |
| from supply and load voltage L+ (without load), max.   | 200 mA; at rated load: max. 400 mA                                         |
| from backplane bus 5 V DC, max.                        | 150 mA                                                                     |
| Power loss                                             |                                                                            |
| Power loss, typ.                                       | 9 W                                                                        |
| Analog outputs                                         |                                                                            |
| Number of analog outputs                               | 8                                                                          |
| Voltage output, short-circuit protection               | Yes                                                                        |
| Voltage output, short-circuit current, max.            | 30 mA                                                                      |
| Current output, no-load voltage, max.                  | 19 V                                                                       |
| Output ranges, voltage                                 |                                                                            |
| • 0 to 10 V                                            | Yes                                                                        |
| • 1 V to 5 V                                           | Yes                                                                        |
| • -10 V to +10 V                                       | Yes                                                                        |
| Output ranges, current                                 |                                                                            |
| • 0 to 20 mA                                           | Yes                                                                        |
| • -20 mA to +20 mA                                     | Yes                                                                        |
| • 4 mA to 20 mA                                        | Yes                                                                        |
| Load impedance (in rated range of output)              |                                                                            |
| • with voltage outputs, min.                           | 1 kΩ                                                                       |
| • with voltage outputs, capacitive load, max.          | 1 μF                                                                       |
| • with current outputs, max.                           | 500 Ω; 600 ohms if common-mode-voltage reduced to <1 V                     |
| Cable length                                           |                                                                            |
| • shielded, max.                                       | 200 m                                                                      |
| Analog value generation for the outputs                |                                                                            |
| Integration and conversion time/resolution per channel |                                                                            |
| • Resolution with overrange (bit including sign), max. | 13 bit                                                                     |
| • Conversion time (per channel)                        | 420 μs; 420 μs in the ranges 1 to 5 V and 4 to 20 mA; 300 μs in all ranges |
| Settling time                                          |                                                                            |
| • for resistive load                                   | 0.1 ms                                                                     |
| • for capacitive load                                  | 3.5 ms                                                                     |
| • for inductive load                                   | 0.5 ms                                                                     |
| Errors/accuracies                                      |                                                                            |
| Operational error limit in overall temperature range   |                                                                            |
| • Voltage, relative to output range, (+/-)             | 0.5 %; ±10 V, 0 to 10 V, 1 to 5 V                                          |

| <ul style="list-style-type: none"><li>• Current, relative to output range, (+/-)</li></ul>      | 1 %; ±20 mA, 4 to 20 mV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|----------------|--------|----|-------------|--------|----|-------------|--------|-----|-------------|--------|---|-------------|--------|---|-------------|--------|-----|-------------|--------|---|-------------|------|----|----------|------|---|----------|------|---|----------|------|---|----------|------|---|------|--------|----|-------------|
| Basic error limit (operational limit at 25 °C)                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| <ul style="list-style-type: none"><li>• Voltage, relative to output range, (+/-)</li></ul>      | 0.5 %; ±10 V, 0 to 10 V, 1 to 5 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| <ul style="list-style-type: none"><li>• Current, relative to output range, (+/-)</li></ul>      | 0.5 %; ±20 mA, 0 to 20 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Interrupts/diagnostics/status information                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Diagnostics function                                                                            | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Potential separation                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Potential separation analog outputs                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| <ul style="list-style-type: none"><li>• between the channels</li></ul>                          | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| <ul style="list-style-type: none"><li>• between the channels and backplane bus</li></ul>        | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| <ul style="list-style-type: none"><li>• Between the channels and load voltage L+</li></ul>      | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Isolation                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Isolation tested with                                                                           | 2 120 V DC between bus and L+/M; 2 120 V DC between bus and analog section; 500 V DC between bus and local ground; 500 V DC between analog section and L+/M; 2 120 V DC between analog section and local ground; 2 120 V DC between L+/M and local ground                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Dimensions                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Width                                                                                           | 25 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Height                                                                                          | 290 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Depth                                                                                           | 210 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Weights                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Weight, approx.                                                                                 | 650 g                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Classifications                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
|                                                                                                 | <table><tr><th></th><th>Version</th><th>Classification</th></tr><tr><td>eClass</td><td>14</td><td>27-24-22-01</td></tr><tr><td>eClass</td><td>12</td><td>27-24-22-01</td></tr><tr><td>eClass</td><td>9.1</td><td>27-24-22-01</td></tr><tr><td>eClass</td><td>9</td><td>27-24-22-01</td></tr><tr><td>eClass</td><td>8</td><td>27-24-22-01</td></tr><tr><td>eClass</td><td>7.1</td><td>27-24-22-01</td></tr><tr><td>eClass</td><td>6</td><td>27-24-22-01</td></tr><tr><td>ETIM</td><td>10</td><td>EC001420</td></tr><tr><td>ETIM</td><td>9</td><td>EC001420</td></tr><tr><td>ETIM</td><td>8</td><td>EC001420</td></tr><tr><td>ETIM</td><td>7</td><td>EC001420</td></tr><tr><td>IDEA</td><td>4</td><td>3562</td></tr><tr><td>UNSPSC</td><td>15</td><td>32-15-17-05</td></tr></table> |                | 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 | 10 | EC001420 | ETIM | 9 | EC001420 | ETIM | 8 | EC001420 | ETIM | 7 | EC001420 | IDEA | 4 | 3562 | UNSPSC | 15 | 32-15-17-05 |
|                                                                                                 | 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                                                                                            | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | EC001420       |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| ETIM                                                                                            | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EC001420       |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| ETIM                                                                                            | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EC001420       |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| ETIM                                                                                            | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EC001420       |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| IDEA                                                                                            | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3562           |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| UNSPSC                                                                                          | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 32-15-17-05    |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Approvals / Certificates                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| General Product Approval                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| <br>EG-Konf. | <a href="#">China RoHS</a> <a href="#">Miscellaneous</a>  <br>UL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| <a href="#">Metrological Approval</a>                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| General Product Approval                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| EMV                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| For use in hazardous locations                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| <a href="#">KC</a>                                                                              | <br>RCM <br>RCM <br>RCM <br>IECEX <br>ATEX                                                                                                                                                                                                                                                                                                     |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| For use in hazardous locations                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |
| Maritime application                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |         |                |        |    |             |        |    |             |        |     |             |        |   |             |        |   |             |        |     |             |        |   |             |      |    |          |      |   |          |      |   |          |      |   |          |      |   |      |        |    |             |

[FM](#)



[Type Examination Certificate](#)



#### Maritime application



[NK / Nippon Kaiji Kyokai](#)



#### Maritime application



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

last modified:

6/7/2025 