



Figure similar

SIMATIC S7-300, Digital input SM 321, isolated, 16 DI; 24 V DC, 1x 20-pole, process interrupt, diagnostics, suitable for isochronous mode

| Supply voltage                                                  |                                 |
|-----------------------------------------------------------------|---------------------------------|
| Load voltage L+                                                 |                                 |
| • Rated value (DC)                                              | 24 V                            |
| • permissible range, lower limit (DC)                           | 20.4 V                          |
| • permissible range, upper limit (DC)                           | 28.8 V                          |
| • Reverse polarity protection                                   | Yes                             |
| Input current                                                   |                                 |
| from load voltage L+ (without load), max.                       | 90 mA                           |
| from backplane bus 5 V DC, max.                                 | 130 mA                          |
| Encoder supply                                                  |                                 |
| Number of outputs                                               | 2                               |
| Type of output voltage                                          | L+ (-2.5 V)                     |
| Short-circuit protection                                        | Yes; Electronic                 |
| additional (redundant) feed                                     | Yes                             |
| Output current                                                  |                                 |
| • Rated value                                                   | 120 mA                          |
| • permissible range, lower limit                                | 0 mA                            |
| • permissible range, upper limit                                | 150 mA                          |
| Power loss                                                      |                                 |
| Power loss, typ.                                                | 4 W                             |
| Digital inputs                                                  |                                 |
| Number of digital inputs                                        | 16                              |
| Input characteristic curve in accordance with IEC 61131, type 2 | Yes                             |
| Number of simultaneously controllable inputs                    |                                 |
| horizontal installation                                         |                                 |
| — up to 40 °C, max.                                             | 16                              |
| — up to 60 °C, max.                                             | 16                              |
| vertical installation                                           |                                 |
| — up to 40 °C, max.                                             | 16                              |
| Input voltage                                                   |                                 |
| • Type of input voltage                                         | DC                              |
| • Rated value (DC)                                              | 24 V                            |
| • for signal "0"                                                | -30 to +5 V                     |
| • for signal "1"                                                | 13 to 30V                       |
| Input current                                                   |                                 |
| • for signal "1", typ.                                          | 7 mA                            |
| Input delay (for rated value of input voltage)                  |                                 |
| for standard inputs                                             |                                 |
| — parameterizable                                               | Yes; 0.1 / 0.5 / 3 / 15 / 20 ms |

|                                                            |                      |
|------------------------------------------------------------|----------------------|
| <b>Encoder connection</b>                                  |                      |
| • Fixed current limitation for wire-break monitoring, min. | 10 kΩ                |
| • Fixed current limitation for wire-break monitoring, max. | 18 kΩ                |
| <b>Cable length</b>                                        |                      |
| • shielded, max.                                           | 1 000 m              |
| • unshielded, max.                                         | 600 m                |
| <b>Encoder</b>                                             |                      |
| <b>Connectable encoders</b>                                |                      |
| • 2-wire sensor                                            | Yes                  |
| — permissible quiescent current (2-wire sensor), max.      | 2 mA                 |
| <b>Interrupts/diagnostics/status information</b>           |                      |
| Alarms                                                     | Yes                  |
| Diagnostics function                                       | Yes; Parameterizable |
| <b>Alarms</b>                                              |                      |
| • Diagnostic alarm                                         | Yes; Parameterizable |
| • Hardware interrupt                                       | Yes; Parameterizable |
| <b>Diagnoses</b>                                           |                      |
| • Diagnostic information readable                          | Yes                  |
| • Wire-break                                               | Yes; to I < 1 mA     |
| <b>Diagnostics indication LED</b>                          |                      |
| • Group error SF (red)                                     | Yes                  |
| • Status indicator digital input (green)                   | Yes                  |
| • Encoder supply Vs (green)                                | Yes                  |
| <b>Potential separation</b>                                |                      |
| <b>Potential separation digital inputs</b>                 |                      |
| • between the channels                                     | No                   |
| • between the channels, in groups of                       | 16                   |
| • between the channels and backplane bus                   | Yes; Optocoupler     |
| <b>Isolation</b>                                           |                      |
| Isolation tested with                                      | 500 V DC             |
| <b>connection method</b>                                   |                      |
| required front connector                                   | 20-pin               |
| <b>Dimensions</b>                                          |                      |
| Width                                                      | 40 mm                |
| Height                                                     | 125 mm               |
| Depth                                                      | 120 mm               |
| <b>Weights</b>                                             |                      |
| Weight, approx.                                            | 200 g                |

**last modified:** 8/16/2023 