6ES7322-1BL00-0AA0

**Data sheet** 



SIMATIC S7-300, Digital output SM 322, isolated, 32 DO, 24 V DC, 0.5A, 1x 40-pole, Total current 4 A/group (16 A/module)

| Supply voltage   |                                     |
|--|-------------------------------------|
| Load voltage L+  |                                     |
| <ul> <li>Rated value (DC)</li> </ul>                                       | 24 V                                |
| <ul> <li>permissible range, lower limit (DC)</li> </ul>                    | 20.4 V                              |
| <ul> <li>permissible range, upper limit (DC)</li> </ul>                    | 28.8 V                              |
| Input current  |                                     |
| from load voltage L+ (without load), max.                                  | 160 mA                              |
| from backplane bus 5 V DC, max.  | 110 mA                              |
| Power loss   |                                     |
| Power loss, typ.   | 6.6 W                               |
| Digital outputs  |                                     |
| Number of digital outputs  | 32                                  |
| Short-circuit protection   | Yes; Electronic                     |
| <ul> <li>Response threshold, typ.</li> </ul>                               | 1 A                                 |
| Limitation of inductive shutdown voltage to                                | L+ (-53 V)                          |
| Controlling a digital input  | Yes                                 |
| Switching capacity of the outputs  |                                     |
| ● on lamp load, max.   | 5 W                                 |
| Load resistance range  |                                     |
| <ul> <li>lower limit</li> </ul>  | 48 Ω                                |
| upper limit  | 4 kΩ                                |
| Output voltage   |                                     |
| ● for signal "1", min.   | L+ (-0.8 V)                         |
| Output current   |                                     |
| <ul><li>for signal "1" rated value</li></ul>                               | 0.5 A                               |
| <ul> <li>for signal "1" permissible range for 0 to 40 °C, min.</li> </ul>  | 5 mA                                |
| <ul> <li>for signal "1" permissible range for 0 to 40 °C, max.</li> </ul>  | 0.6 A                               |
| <ul> <li>for signal "1" permissible range for 40 to 60 °C, min.</li> </ul> | 5 mA                                |
| • for signal "1" permissible range for 40 to 60 °C, max.                   | 0.6 A                               |
| <ul><li>◆ for signal "1" minimum load current</li></ul>                    | 5 mA                                |
| • for signal "0" residual current, max.                                    | 0.5 mA                              |
| Output delay with resistive load   |                                     |
| • "0" to "1", max.   | 100 μs                              |
| ● "1" to "0", max.   | 500 μs                              |
| Parallel switching of two outputs  |                                     |
| <ul><li>for uprating</li></ul>   | No                                  |
| for redundant control of a load  | Yes; only outputs of the same group |
| Switching frequency  |                                     |
| <ul> <li>with resistive load, max.</li> </ul>                              | 100 Hz                              |
| <ul> <li>with inductive load, max.</li> </ul>                              | 0.5 Hz                              |

| on lamp load, max.  Total current of the outputs (per group)  horizontal installation  — up to 40 °C, max. — up to 60 °C, max.  — up to 40 °C, max.  2 A  Cable length  • shielded, max. • unshielded, max. • unshielded, max. • unshielded, max.  000 m  Interrupts/diagnostics/status Information  Alarms  No  Diagnostics function  No  Alarms  • Diagnostic alarm  No  Diagnostic information readable • Wire-break • Short-circuit • missing load voltage  Diagnostics indication LED  • Rated load voltage PWR (green) • Rated roughle function lone • Group error SF (red) • Channel fault indicator F (red)  | • with inductive load (acc. to IEC 60947-5-1, DC13), max.   | 0.5 Hz           |
|--|---|------------------|
| Total current of the outputs (per group)  horizontal installation  — up to 40 °C, max.   |   |                  |
| horizontal installation  - up to 40 °C, max up to 60 °C, max up to 60 °C, max.  - up to 40 °C, max.  2 A  Cable length  • shielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • one max. • Diagnostics function  Alarms  • Diagnostics function  No  Diagnostic alarm  No  Diagnostic information readable • Wire-break • Diagnostic information readable • Wire-break • Short-circuit • No • missing load voltage  No  Diagnostics indication LED  • Rated load voltage PWR (green) • Fuse OK FSG (green) • Group error SF (red) • Status indicator E (red) • Channel fault indicator F (red)   |   | 10112            |
| up to 40 °C, max up to 60 °C, max. 3 A  vertical installation up to 40 °C, max. 2 A  Cable length  • shielded, max. • unshielded, max. • unshielded, max. 600 m  Interrupts/diagnostics/status information  Alarms No Diagnostics function  Alarms • Diagnostic alarm Diagnoses • Diagnostic information readable • Wire-break • Short-circuit • No • missing load voltage No  Diagnostics indication LED • Rated load voltage PWR (green) • Fuse OK FSG (green) • Group error SF (red) • Status indicator F (red) • Channel fault indicator F (red)   |   |                  |
| - up to 60 °C, max.  vertical installation  - up to 40 °C, max.  2 A  Cable length  • shielded, max. • unshielded, max.  • unshielded, max.  600 m  Interrupts/diagnostics/status information  Alarms  No  Diagnostics function  Alarms  • Diagnostic alarm  No  Diagnostic information readable  • Wire-break  • Short-circuit  • Short-circuit  • Rated load voltage  No  Diagnostics indication LED  • Rated load voltage PWR (green)  • Fuse OK FSG (green)  • Group error SF (red)  • Status indicator digital output (green)  • Channel fault indicator F (red)  |   | 4 A              |
| vertical installation  — up to 40 °C, max.  Cable length  • shielded, max. • unshielded, max. • 1000 m • unshielded, max. • 600 m  Interrupts/diagnostics/status information  Alarms  No Diagnostics function  Alarms  • Diagnostic alarm  No Diagnoses  • Diagnostic information readable • Wire-break • Short-circuit • missing load voltage  Piagnostics indication LED  • Rated load voltage PWR (green) • Fuse OK FSG (green) • Group error SF (red) • Status indicator digital output (green) • Channel fault indicator F (red)  • Channel fault indicator F (red)   |   |                  |
| — up to 40 °C, max. 2 A  Cable length  ● shielded, max. 1000 m  ● unshielded, max. 600 m  Interrupts/diagnostics/status information  Alarms No Diagnostics function No  Alarms  ● Diagnostic alarm No  Diagnoses  ● Diagnostic information readable No  ● Wire-break No  ● Short-circuit No  ● missing load voltage No  Diagnostics indication LED  ● Rated load voltage PWR (green) No  ● Fuse OK FSG (green) No  ● Group error SF (red) No  ● Status indicator digital output (green) Yes; per channel  ● Channel fault indicator F (red) No   |   |                  |
| Cable length  • shielded, max. • unshielded, max. 600 m  Interrupts/diagnostics/status information  Alarms  No Diagnostics function  Alarms  • Diagnostic alarm  No Diagnoses  • Diagnostic information readable • Wire-break • Short-circuit • missing load voltage  Diagnostics indication LED  • Rated load voltage PWR (green) • Fuse OK FSG (green) • Group error SF (red) • Status indicator digital output (green) • Channel fault indicator F (red)  1000 m  6000 m  No  1000 m  No  No  No  No  No  No  Puse OK FSG (green) No  No  Puse Channel Puse OK FSG (green) No  No  Puse OK FSG (green) No  No  Puse Channel fault indicator F (red) |   | 2 A              |
| unshielded, max. 600 m  Interrupts/diagnostics/status information  Alarms No Diagnostics function No  Alarms      Diagnostic alarm No  Diagnoses      Diagnostic information readable No     Wire-break No     Short-circuit No     missing load voltage No  Diagnostics indication LED  Rated load voltage PWR (green) No     Fuse OK FSG (green) No     Group error SF (red) No     Status indicator digital output (green) Yes; per channel     Channel fault indicator F (red) No  Channel fault indicator F (red)   |   |                  |
| Interrupts/diagnostics/status information  Alarms  Diagnostics function  No  Alarms  Diagnostic alarm  No  Diagnoses  Diagnostic information readable Wire-break Short-circuit No missing load voltage No  Diagnostics indication LED  Rated load voltage PWR (green) Fuse OK FSG (green) Group error SF (red) Status indicator digital output (green) Status indicator F (red) No  Channel fault indicator F (red) No   | shielded, max.  | 1 000 m          |
| Alarms Diagnostics function  Alarms Diagnostic alarm No Diagnoses Diagnostic information readable Wire-break Short-circuit Singli load voltage No Diagnostics indication LED Rated load voltage PWR (green) Fuse OK FSG (green) Group error SF (red) Status indicator digital output (green) Channel fault indicator F (red) No  | • unshielded, max.  | 600 m            |
| Diagnostics function  Alarms  Diagnostic alarm  No  Diagnoses  Diagnostic information readable Wire-break No Short-circuit No missing load voltage  No  Diagnostics indication LED  Rated load voltage PWR (green) Fuse OK FSG (green) Group error SF (red) Status indicator digital output (green) Channel fault indicator F (red) No   | Interrupts/diagnostics/status information                   |                  |
| Alarms  Diagnostic alarm  No  Diagnoses  Diagnostic information readable  Wire-break  Short-circuit  No  missing load voltage  No  Diagnostics indication LED  Rated load voltage PWR (green)  Fuse OK FSG (green)  Group error SF (red)  Status indicator digital output (green)  Channel fault indicator F (red)  No   | Alarms  | No               |
| Diagnostic alarm     Diagnoses      Diagnostic information readable     Wire-break     No     Short-circuit     No     missing load voltage     No  Pated load voltage PWR (green)     Fuse OK FSG (green)     Group error SF (red)     Status indicator digital output (green)     Channel fault indicator F (red)  No  No  No  No  No  No  No  No  No  N   | Diagnostics function  | No               |
| Diagnoses  Diagnostic information readable  Wire-break  Short-circuit  Mo  missing load voltage  No  Diagnostics indication LED  Rated load voltage PWR (green)  Fuse OK FSG (green)  Group error SF (red)  Status indicator digital output (green)  Channel fault indicator F (red)  No  No  No  No  No  Yes; per channel  No   |   |                  |
| Diagnostic information readable  Wire-break  Short-circuit  Mo  missing load voltage  No  Diagnostics indication LED  Rated load voltage PWR (green)  Fuse OK FSG (green)  Group error SF (red)  Status indicator digital output (green)  Channel fault indicator F (red)  No  No  No  No  No  No  No  No  No  N   | Diagnostic alarm  | No               |
| Wire-break Short-circuit No missing load voltage No  Diagnostics indication LED  Rated load voltage PWR (green) Fuse OK FSG (green) Group error SF (red) Status indicator digital output (green) Channel fault indicator F (red) No  No  No  No  No  Yes; per channel No   | Diagnoses   |                  |
| Short-circuit  In missing load voltage  No  Diagnostics indication LED  Rated load voltage PWR (green)  Fuse OK FSG (green)  Group error SF (red)  Status indicator digital output (green)  Channel fault indicator F (red)  No  No  No  | <ul> <li>Diagnostic information readable</li> </ul>         | No               |
| <ul> <li>missing load voltage</li> <li>Diagnostics indication LED</li> <li>Rated load voltage PWR (green)</li> <li>Fuse OK FSG (green)</li> <li>Group error SF (red)</li> <li>Status indicator digital output (green)</li> <li>Channel fault indicator F (red)</li> <li>No</li> </ul>  | Wire-break  | No               |
| Diagnostics indication LED  • Rated load voltage PWR (green)  • Fuse OK FSG (green)  • Group error SF (red)  • Status indicator digital output (green)  • Channel fault indicator F (red)  No  | <ul> <li>Short-circuit</li> </ul>                           | No               |
| <ul> <li>Rated load voltage PWR (green)</li> <li>Fuse OK FSG (green)</li> <li>Group error SF (red)</li> <li>Status indicator digital output (green)</li> <li>Channel fault indicator F (red)</li> <li>No</li> </ul>  | missing load voltage  | No               |
| <ul> <li>Fuse OK FSG (green)</li> <li>Group error SF (red)</li> <li>Status indicator digital output (green)</li> <li>Channel fault indicator F (red)</li> <li>No</li> </ul>  | Diagnostics indication LED                                  |                  |
| <ul> <li>Group error SF (red)</li> <li>Status indicator digital output (green)</li> <li>Channel fault indicator F (red)</li> <li>No</li> </ul>   | <ul> <li>Rated load voltage PWR (green)</li> </ul>          | No               |
| <ul> <li>Status indicator digital output (green)</li> <li>Channel fault indicator F (red)</li> <li>No</li> </ul>   | <ul> <li>Fuse OK FSG (green)</li> </ul>                     | No               |
| Channel fault indicator F (red)     No   | <ul> <li>Group error SF (red)</li> </ul>                    | No               |
|  | <ul> <li>Status indicator digital output (green)</li> </ul> | Yes; per channel |
| Potential separation   | <ul> <li>Channel fault indicator F (red)</li> </ul>         | No               |
|  | Potential separation  |                  |
| Potential separation digital outputs   | Potential separation digital outputs                        |                  |
| • between the channels Yes   | <ul> <li>between the channels</li> </ul>                    | Yes              |
| • between the channels, in groups of 8   | <ul> <li>between the channels, in groups of</li> </ul>      | 8                |
| • between the channels and backplane bus  Yes; Optocoupler   | between the channels and backplane bus                      | Yes; Optocoupler |
| Isolation  | Isolation   |                  |
| Isolation tested with 500 V DC   | Isolation tested with                                       | 500 V DC         |
| connection method  | connection method   |                  |
| required front connector 40-pin  | required front connector                                    | 40-pin           |
| Dimensions   | Dimensions  |                  |
| Width 40 mm  | Width   | 40 mm            |
| Height 125 mm  | Height  | 125 mm           |
| Depth 120 mm   |   | 120 mm           |
| Weights  | Weights   |                  |
| Weight, approx. 260 g  | Weight, approx.   | 260 g            |

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