



Figure similar

SIPLUS S7-300 SM 322-20-pole based on 6ES7322-1HH01-0AA0 with conformal coating, -40...+70 °C, digital output optically isolated 16 DQ, relay contacts

| General information                                       |                                    |
|-----------------------------------------------------------|------------------------------------|
| based on                                                  | <a href="#">6ES7322-1HH01-0AA0</a> |
| Supply voltage                                            |                                    |
| Load voltage L+                                           |                                    |
| • Rated value (DC)                                        | 120 V                              |
| Load voltage L1                                           |                                    |
| • Rated value (AC)                                        | 230 V                              |
| Input current                                             |                                    |
| from supply voltage L+, max.                              | 250 mA                             |
| from backplane bus 5 V DC, max.                           | 100 mA                             |
| Power loss                                                |                                    |
| Power loss, typ.                                          | 4.5 W                              |
| Digital outputs                                           |                                    |
| Number of digital outputs                                 | 16; Relays                         |
| Short-circuit protection                                  | No                                 |
| Controlling a digital input                               | Yes                                |
| Size of motor starters according to NEMA, max.            | Size 5 according to NEMA           |
| Switching capacity of the outputs                         |                                    |
| • on lamp load, max.                                      | 50 W; 230 V AC                     |
| Output current                                            |                                    |
| • for signal "1" rated value                              | 2 A                                |
| • for signal "1" minimum load current                     | 10 mA                              |
| Parallel switching of two outputs                         |                                    |
| • for uprating                                            | No                                 |
| • for redundant control of a load                         | Yes                                |
| Switching frequency                                       |                                    |
| • with resistive load, max.                               | 1 Hz                               |
| • with inductive load, max.                               | 0.5 Hz                             |
| • With inductive load (to IEC 60947-5-1, DC13/AC15), max. | 0.5 Hz                             |
| • on lamp load, max.                                      | 1 Hz                               |
| • mechanical, max.                                        | 10 Hz                              |
| Total current of the outputs (per group)                  |                                    |
| horizontal installation                                   |                                    |
| — up to 60 °C, max.                                       | 8 A                                |
| vertical installation                                     |                                    |
| — up to 40 °C, max.                                       | 8 A                                |
| Relay outputs                                             |                                    |
| • Rated supply voltage of relay coil L+ (DC)              | 24 V                               |
| • Contact connection (internal)                           | No                                 |

|                                                                      |                                                                                                                             |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| • Number of operating cycles, max.                                   | 100 000; 50 000 (24 V DC, at 2 A); 700 000 (120 V AC, at 2 A); 100 000 (230 V AC, at 2 A)                                   |
| <b>Switching capacity of contacts</b>                                |                                                                                                                             |
| — with inductive load, max.                                          | 2 A; 2 A (230 V AC), 2 A (24 V DC)                                                                                          |
| — with resistive load, max.                                          | 2 A; 2 A (230 V AC), 2 A (24 V DC)                                                                                          |
| — Thermal continuous current, max.                                   | 2 A                                                                                                                         |
| <b>Cable length</b>                                                  |                                                                                                                             |
| • shielded, max.                                                     | 1 000 m                                                                                                                     |
| • unshielded, max.                                                   | 600 m                                                                                                                       |
| <b>Interrupts/diagnostics/status information</b>                     |                                                                                                                             |
| Alarms                                                               | No                                                                                                                          |
| Diagnostics function                                                 | No                                                                                                                          |
| <b>Alarms</b>                                                        |                                                                                                                             |
| • Diagnostic alarm                                                   | No                                                                                                                          |
| <b>Diagnoses</b>                                                     |                                                                                                                             |
| • Wire-break                                                         | No                                                                                                                          |
| • Short-circuit                                                      | No                                                                                                                          |
| • Fuse blown                                                         | No                                                                                                                          |
| • missing load voltage                                               | No                                                                                                                          |
| <b>Diagnostics indication LED</b>                                    |                                                                                                                             |
| • Rated load voltage PWR (green)                                     | No                                                                                                                          |
| • Fuse OK FSG (green)                                                | No                                                                                                                          |
| • Status indicator digital output (green)                            | Yes                                                                                                                         |
| <b>Potential separation</b>                                          |                                                                                                                             |
| <b>Potential separation digital outputs</b>                          |                                                                                                                             |
| • between the channels                                               | Yes                                                                                                                         |
| • between the channels, in groups of                                 | 8                                                                                                                           |
| • between the channels and backplane bus                             | Yes; Optocoupler                                                                                                            |
| <b>Isolation</b>                                                     |                                                                                                                             |
| Isolation tested with                                                | 1 500 V AC                                                                                                                  |
| <b>Standards, approvals, certificates</b>                            |                                                                                                                             |
| CE mark                                                              | Yes                                                                                                                         |
| UL approval                                                          | Yes; File E239877                                                                                                           |
| RCM (formerly C-TICK)                                                | Yes                                                                                                                         |
| KC approval                                                          | Yes                                                                                                                         |
| EAC (formerly Gost-R)                                                | Yes                                                                                                                         |
| <b>Railway application</b>                                           |                                                                                                                             |
| • EN 50155                                                           | Yes; Sections 4, 5 and 12; no further agreements apply; T1, Category 1, Class A/B, EN 50155:2007 (see SIOS entry 109755985) |
| <b>Ambient conditions</b>                                            |                                                                                                                             |
| <b>Ambient temperature during operation</b>                          |                                                                                                                             |
| • min.                                                               | -40 °C; = Tmin                                                                                                              |
| • max.                                                               | 70 °C; = Tmax; 60 °C @ UL/cUL, ATEX and FM use                                                                              |
| <b>Ambient temperature during storage/transportation</b>             |                                                                                                                             |
| • min.                                                               | -40 °C                                                                                                                      |
| • max.                                                               | 70 °C                                                                                                                       |
| <b>Altitude during operation relating to sea level</b>               |                                                                                                                             |
| • Installation altitude above sea level, max.                        | 2 000 m                                                                                                                     |
| • Ambient air temperature-barometric pressure-altitude               | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m)                                                              |
| <b>Relative humidity</b>                                             |                                                                                                                             |
| • With condensation, tested in accordance with IEC 60068-2-38, max.  | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions)                                         |
| <b>Resistance</b>                                                    |                                                                                                                             |
| <b>Use in stationary industrial systems</b>                          |                                                                                                                             |
| — to biologically active substances according to EN 60721-3-3        | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request                          |
| — to chemically active substances according to EN 60721-3-3          | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *                                    |
| — to mechanically active substances according to EN 60721-3-3        | Yes; Class 3S4 incl. sand, dust, *                                                                                          |
| <b>Use on land craft, rail vehicles and special-purpose vehicles</b> |                                                                                                                             |
| — to biologically active substances according to EN                  | Yes; Class 5B2 mold, fungus and dry rot spores (with the exception of fauna);                                               |

|                                                                                                             |                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 60721-3-5                                                                                                   | Class 5B3 on request                                                                                                                                                                |
| — to chemically active substances according to EN 60721-3-5                                                 | Yes; Class 5C3 (RH < 75 %) incl. salt spray acc. to EN 50155 (ST2); *                                                                                                               |
| — to mechanically active substances according to EN 60721-3-5                                               | Yes; Class 5S3 incl. sand, dust; *                                                                                                                                                  |
| <b>Use on ships/at sea</b>                                                                                  |                                                                                                                                                                                     |
| — to biologically active substances according to EN 60721-3-6                                               | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request                                                                                                       |
| — to chemically active substances according to EN 60721-3-6                                                 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *                                                                                            |
| — to mechanically active substances according to EN 60721-3-6                                               | Yes; Class 6S3 incl. sand, dust; *                                                                                                                                                  |
| <b>Usage in industrial process technology</b>                                                               |                                                                                                                                                                                     |
| — Against chemically active substances acc. to EN 60654-4                                                   | Yes; Class 3 (excluding trichlorethylene)                                                                                                                                           |
| — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04                | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) |
| <b>Remark</b>                                                                                               |                                                                                                                                                                                     |
| — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation!                                                                                        |

#### connection method

|                          |        |
|--------------------------|--------|
| required front connector | 20-pin |
|--------------------------|--------|

#### Dimensions

|        |        |
|--------|--------|
| Width  | 40 mm  |
| Height | 125 mm |
| Depth  | 120 mm |

#### Weights

|                 |       |
|-----------------|-------|
| Weight, approx. | 250 g |
|-----------------|-------|

#### Classifications

|        | Version | Classification |
|--------|---------|----------------|
| eClass | 14      | 27-24-22-04    |
| eClass | 12      | 27-24-22-04    |
| eClass | 9.1     | 27-24-22-04    |
| eClass | 9       | 27-24-22-04    |
| eClass | 8       | 27-24-22-04    |
| eClass | 7.1     | 27-24-22-04    |
| eClass | 6       | 27-24-22-04    |
| ETIM   | 9       | EC001419       |
| ETIM   | 8       | EC001419       |
| ETIM   | 7       | EC001419       |
| IDEA   | 4       | 3566           |
| UNSPSC | 15      | 32-15-17-05    |

#### Approvals / Certificates

##### General Product Approval

[Miscellaneous](#)

[Manufacturer Declaration](#)

[Declaration of Conformity](#)



#### EMV

[KC](#)



last modified:

5/29/2024

