



Figure similar

SIPLUS S7-1200 SM 1222 8DQ RLY based on 6ES7222-1HF32-0XB0 with conformal coating, -20...+60 °C, digital output 8 DQ, relay 2 A

| General information                                                                          |                                                        |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Product type designation                                                                     | SM 1222, DQ 8x relay/2 A                               |
| based on                                                                                     | <a href="#">6ES7222-1HF32-0XB0</a>                     |
| Supply voltage                                                                               |                                                        |
| permissible range, lower limit (DC)                                                          | 20.4 V                                                 |
| permissible range, upper limit (DC)                                                          | 28.8 V                                                 |
| Input current                                                                                |                                                        |
| from backplane bus 5 V DC, max.                                                              | 120 mA                                                 |
| Digital outputs                                                                              |                                                        |
| <ul style="list-style-type: none"> <li>from load voltage L+, max.</li> </ul>                 | 11 mA/relay coil                                       |
| Power loss                                                                                   |                                                        |
| Power loss, typ.                                                                             | 4.5 W                                                  |
| Digital outputs                                                                              |                                                        |
| Number of digital outputs                                                                    | 8                                                      |
| <ul style="list-style-type: none"> <li>in groups of</li> </ul>                               | 2                                                      |
| Short-circuit protection                                                                     | No; to be provided externally                          |
| Switching capacity of the outputs                                                            |                                                        |
| <ul style="list-style-type: none"> <li>with resistive load, max.</li> </ul>                  | 2 A                                                    |
| <ul style="list-style-type: none"> <li>on lamp load, max.</li> </ul>                         | 30 W with DC, 200 W with AC                            |
| Output voltage                                                                               |                                                        |
| <ul style="list-style-type: none"> <li>Rated value (DC)</li> </ul>                           | 5 V DC to 30 V DC                                      |
| <ul style="list-style-type: none"> <li>Rated value (AC)</li> </ul>                           | 5 V AC to 250 V AC                                     |
| Output current                                                                               |                                                        |
| <ul style="list-style-type: none"> <li>for signal "1" rated value</li> </ul>                 | 2 A                                                    |
| Output delay with resistive load                                                             |                                                        |
| <ul style="list-style-type: none"> <li>"0" to "1", max.</li> </ul>                           | 10 ms                                                  |
| <ul style="list-style-type: none"> <li>"1" to "0", max.</li> </ul>                           | 10 ms                                                  |
| Total current of the outputs (per group)                                                     |                                                        |
| horizontal installation                                                                      |                                                        |
| — up to 50 °C, max.                                                                          | 10 A; Current per mass                                 |
| Relay outputs                                                                                |                                                        |
| <ul style="list-style-type: none"> <li>Number of relay outputs</li> </ul>                    | 8                                                      |
| <ul style="list-style-type: none"> <li>Rated supply voltage of relay coil L+ (DC)</li> </ul> | 24 V                                                   |
| <ul style="list-style-type: none"> <li>Number of operating cycles, max.</li> </ul>           | mechanically 10 million, at rated load voltage 100 000 |
| Switching capacity of contacts                                                               |                                                        |
| — with inductive load, max.                                                                  | 2 A                                                    |
| — on lamp load, max.                                                                         | 30 W with DC, 200 W with AC                            |
| — with resistive load, max.                                                                  | 2 A                                                    |

|                                                                     |                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cable length                                                        |                                                                                                                                                                                                                                               |
| • shielded, max.                                                    | 500 m                                                                                                                                                                                                                                         |
| • unshielded, max.                                                  | 150 m                                                                                                                                                                                                                                         |
| <b>Interrupts/diagnostics/status information</b>                    |                                                                                                                                                                                                                                               |
| Alarms                                                              |                                                                                                                                                                                                                                               |
| • Diagnostic alarm                                                  | Yes                                                                                                                                                                                                                                           |
| Diagnostics indication LED                                          |                                                                                                                                                                                                                                               |
| • for status of the outputs                                         | Yes                                                                                                                                                                                                                                           |
| <b>Potential separation</b>                                         |                                                                                                                                                                                                                                               |
| Potential separation digital outputs                                |                                                                                                                                                                                                                                               |
| • between the channels                                              | Relays                                                                                                                                                                                                                                        |
| • between the channels, in groups of                                | 2                                                                                                                                                                                                                                             |
| • between the channels and backplane bus                            | 1 500 V AC for 1 minute                                                                                                                                                                                                                       |
| <b>Permissible potential difference</b>                             |                                                                                                                                                                                                                                               |
| between different circuits                                          | 750 V AC for 1 minute                                                                                                                                                                                                                         |
| <b>Degree and class of protection</b>                               |                                                                                                                                                                                                                                               |
| IP degree of protection                                             | IP20                                                                                                                                                                                                                                          |
| <b>Standards, approvals, certificates</b>                           |                                                                                                                                                                                                                                               |
| Ecological footprint                                                |                                                                                                                                                                                                                                               |
| • environmental product declaration                                 | Yes                                                                                                                                                                                                                                           |
| Global warming potential                                            |                                                                                                                                                                                                                                               |
| — global warming potential, (total) [CO2 eq]                        | 68.6 kg                                                                                                                                                                                                                                       |
| — global warming potential, (during production) [CO2 eq]            | 8.16 kg                                                                                                                                                                                                                                       |
| — global warming potential, (during operation) [CO2 eq]             | 60.7 kg                                                                                                                                                                                                                                       |
| — global warming potential, (after end of life cycle) [CO2 eq]      | -0.334 kg                                                                                                                                                                                                                                     |
| <b>Ambient conditions</b>                                           |                                                                                                                                                                                                                                               |
| Free fall                                                           |                                                                                                                                                                                                                                               |
| • Fall height, max.                                                 | 0.3 m; five times, in product package                                                                                                                                                                                                         |
| Ambient temperature during operation                                |                                                                                                                                                                                                                                               |
| • min.                                                              | -20 °C; = Tmin (incl. condensation/frost); start-up @ 0 °C                                                                                                                                                                                    |
| • max.                                                              | 60 °C; = Tmax                                                                                                                                                                                                                                 |
| • At cold restart, min.                                             | 0 °C                                                                                                                                                                                                                                          |
| Ambient temperature during storage/transportation                   |                                                                                                                                                                                                                                               |
| • min.                                                              | -40 °C                                                                                                                                                                                                                                        |
| • max.                                                              | 70 °C                                                                                                                                                                                                                                         |
| Altitude during operation relating to sea level                     |                                                                                                                                                                                                                                               |
| • 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) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax - 20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m); above 2 000 m max. 132 V AC |
| Relative humidity                                                   |                                                                                                                                                                                                                                               |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions)                                                                                                                                                           |
| <b>Resistance</b>                                                   |                                                                                                                                                                                                                                               |
| Coolants and lubricants                                             |                                                                                                                                                                                                                                               |
| — Resistant to commercially available coolants and lubricants       | Yes; Incl. diesel and oil droplets in the air                                                                                                                                                                                                 |
| Use in stationary industrial systems                                |                                                                                                                                                                                                                                               |
| — 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, *                                                                                                                                                                                                            |
| Use on ships/at sea                                                 |                                                                                                                                                                                                                                               |
| — 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; *                                                                                                                                                  |         |                      |
| Usage in industrial process technology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                     |         |                      |
| — 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) |         |                      |
| Remark                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                     |         |                      |
| — 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!                                                                                        |         |                      |
| Conformal coating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                     |         |                      |
| • Coatings for printed circuit board assemblies acc. to EN 61086                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes; Class 2 for high reliability                                                                                                                                                   |         |                      |
| • Protection against fouling acc. to EN 60664-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes; Type 1 protection                                                                                                                                                              |         |                      |
| • Military testing according to MIL-I-46058C, Amendment 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Yes; Discoloration of coating possible during service life                                                                                                                          |         |                      |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A                                                                                                                                                                                                                                                                                                                                                                                                         | Yes; Conformal coating, Class A                                                                                                                                                     |         |                      |
| Connection method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                     |         |                      |
| required front connector                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Yes                                                                                                                                                                                 |         |                      |
| Mechanics/material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                     |         |                      |
| Enclosure material (front)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                     |         |                      |
| • Plastic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Yes                                                                                                                                                                                 |         |                      |
| Dimensions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                     |         |                      |
| Width                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 45 mm                                                                                                                                                                               |         |                      |
| Height                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 100 mm                                                                                                                                                                              |         |                      |
| Depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 75 mm                                                                                                                                                                               |         |                      |
| Weights                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                     |         |                      |
| Weight, approx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 190 g                                                                                                                                                                               |         |                      |
| Classifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                     |         |                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                     | Version | Classification       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | eClass                                                                                                                                                                              | 16      | 27-24-22-04          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 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                                                                                                                                                                                | 10      | EC001419             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ETIM                                                                                                                                                                                | 9       | EC001419             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ETIM                                                                                                                                                                                | 8       | EC001419             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ETIM                                                                                                                                                                                | 7       | EC001419             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | IDEA                                                                                                                                                                                | 4       | 3566                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | UNSPSC                                                                                                                                                                              | 15      | 32-15-17-05          |
| Approvals / Certificates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                     |         |                      |
| General Product Approval                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                     |         |                      |
| <div><div><a href="#">Manufacturer Declaration</a></div><div><div>EG-Konf.</div></div><div></div><div><a href="#">China RoHS</a></div><div><div>UL</div></div><div></div></div> |                                                                                                                                                                                     |         |                      |
| General Product Approval                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                     | EMV     | Maritime application |

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## Environment



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