



Figure similar

SIPLUS S7-1500 DQ 16x230VAC 1A ST TRIAC based on 6ES7522-5FH00-0AB0 with conformal coating, -40...+70 °C, start up -25 °C, digital output module 16 channels in groups of 2; 2 A per group; substitute value

| General information                                      |                                                                              |
|----------------------------------------------------------|------------------------------------------------------------------------------|
| Product type designation                                 | DQ 16x230VAC/1A ST (Triac)                                                   |
| Firmware version                                         |                                                                              |
| • FW update possible                                     | Yes                                                                          |
| based on                                                 | <a href="#">6ES7522-5FH00-0AB0</a>                                           |
| Product function                                         |                                                                              |
| • I&M data                                               | Yes; I&M0 to I&M3                                                            |
| • Isochronous mode                                       | No                                                                           |
| • Prioritized startup                                    | Yes                                                                          |
| Engineering with                                         |                                                                              |
| • STEP 7 TIA Portal configurable/integrated from version | see entry ID: 109746275                                                      |
| Operating mode                                           |                                                                              |
| • DQ                                                     | Yes                                                                          |
| • DQ with energy-saving function                         | No                                                                           |
| • PWM                                                    | No                                                                           |
| • Oversampling                                           | No                                                                           |
| • MSO                                                    | Yes                                                                          |
| • Integrated operating cycle counter                     | Yes; FW V1.3.0 or higher                                                     |
| output voltage / header                                  |                                                                              |
| Rated value (AC)                                         | 230 V; 120/230 V AC, 50/60 Hz                                                |
| Power                                                    |                                                                              |
| Power consumption from the backplane bus                 | 1.2 W                                                                        |
| Power loss                                               |                                                                              |
| Power loss, typ.                                         | 11.1 W                                                                       |
| Digital outputs                                          |                                                                              |
| Type of digital output                                   | Triac                                                                        |
| Number of digital outputs                                | 16                                                                           |
| Current-sinking                                          | Yes                                                                          |
| Current-sourcing                                         | Yes                                                                          |
| Digital outputs, parameterizable                         | Yes                                                                          |
| Short-circuit protection                                 | No                                                                           |
| • built-in fuse                                          | 6.3 A melting fuse, slow-blow                                                |
| Size of motor starters according to NEMA, max.           | 4                                                                            |
| Switching capacity of the outputs                        |                                                                              |
| • with resistive load, max.                              | 1 A                                                                          |
| • on lamp load, max.                                     | 50 W                                                                         |
| Output voltage                                           |                                                                              |
| • for signal "1", min.                                   | L1 (-1.5 V) at maximum output current; L1 (-8.5 V) at minimum output current |
| Output current                                           |                                                                              |

|                                                                                                                                                                                                                                               |                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• for signal "1" rated value</li> <li>• for signal "1" permissible range, min.</li> <li>• for signal "1" permissible range, max.</li> <li>• for signal "0" residual current, max.</li> </ul>           | 1 A<br>10 mA<br>15 A; max. 1 AC cycle<br>2 mA                                                                                                    |
| <b>Output delay with resistive load</b>                                                                                                                                                                                                       |                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• "0" to "1", max.</li> <li>• "1" to "0", max.</li> </ul>                                                                                                                                              | 1 AC cycle<br>1 AC cycle                                                                                                                         |
| <b>Parallel switching of two outputs</b>                                                                                                                                                                                                      |                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• for logic links</li> <li>• for uprating</li> <li>• for redundant control of a load</li> </ul>                                                                                                        | No<br>No<br>Yes                                                                                                                                  |
| <b>Switching frequency</b>                                                                                                                                                                                                                    |                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• with resistive load, max.</li> <li>• with inductive load, max.</li> <li>• on lamp load, max.</li> </ul>                                                                                              | 10 Hz<br>0.5 Hz<br>1 Hz                                                                                                                          |
| <b>Total current of the outputs</b>                                                                                                                                                                                                           |                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• Current per channel, max.</li> <li>• Current per group, max.</li> <li>• Current per module, max.</li> </ul>                                                                                          | 1 A; see additional description in the manual<br>2 A; see additional description in the manual<br>10 A; see additional description in the manual |
| <b>Cable length</b>                                                                                                                                                                                                                           |                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• shielded, max.</li> <li>• unshielded, max.</li> </ul>                                                                                                                                                | 1 000 m<br>600 m                                                                                                                                 |
| <b>Interrupts/diagnostics/status information</b>                                                                                                                                                                                              |                                                                                                                                                  |
| Diagnostics function                                                                                                                                                                                                                          | No                                                                                                                                               |
| Substitute values connectable                                                                                                                                                                                                                 | Yes                                                                                                                                              |
| <b>Alarms</b>                                                                                                                                                                                                                                 |                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• Diagnostic alarm</li> <li>• Maintenance interrupt</li> </ul>                                                                                                                                         | No<br>Yes; maintenance alarm for switching cycle counter                                                                                         |
| <b>Diagnoses</b>                                                                                                                                                                                                                              |                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• Monitoring the supply voltage</li> <li>• Wire-break</li> <li>• Short-circuit</li> </ul>                                                                                                              | No<br>No<br>No                                                                                                                                   |
| <b>Diagnostics indication LED</b>                                                                                                                                                                                                             |                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• RUN LED</li> <li>• ERROR LED</li> <li>• Monitoring of the supply voltage (PWR-LED)</li> <li>• Channel status display</li> <li>• for channel diagnostics</li> <li>• for module diagnostics</li> </ul> | Yes; green LED<br>Yes; red LED<br>No<br>Yes; green LED<br>No<br>Yes; red LED                                                                     |
| <b>Potential separation</b>                                                                                                                                                                                                                   |                                                                                                                                                  |
| <b>Potential separation channels</b>                                                                                                                                                                                                          |                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• between the channels</li> <li>• between the channels, in groups of</li> <li>• between the channels and backplane bus</li> </ul>                                                                      | No<br>2<br>Yes                                                                                                                                   |
| <b>Permissible potential difference</b>                                                                                                                                                                                                       |                                                                                                                                                  |
| between different circuits                                                                                                                                                                                                                    | 250 V AC between the channels and the backplane bus; 500 V AC between the channels                                                               |
| <b>Isolation</b>                                                                                                                                                                                                                              |                                                                                                                                                  |
| Isolation tested with                                                                                                                                                                                                                         | 3 100 V DC                                                                                                                                       |
| <b>Standards, approvals, certificates</b>                                                                                                                                                                                                     |                                                                                                                                                  |
| Suitable for safety functions                                                                                                                                                                                                                 | No                                                                                                                                               |
| <b>Ecological footprint</b>                                                                                                                                                                                                                   |                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• environmental product declaration</li> </ul>                                                                                                                                                         | Yes                                                                                                                                              |
| <b>Global warming potential</b>                                                                                                                                                                                                               |                                                                                                                                                  |
| — global warming potential, (total) [CO2 eq]                                                                                                                                                                                                  | 43.8 kg                                                                                                                                          |
| — global warming potential, (during production) [CO2 eq]                                                                                                                                                                                      | 9.5 kg                                                                                                                                           |
| — global warming potential, (during operation) [CO2 eq]                                                                                                                                                                                       | 34.5 kg                                                                                                                                          |
| — global warming potential, (after end of life cycle) [CO2 eq]                                                                                                                                                                                | -0.231 kg                                                                                                                                        |

| product functions / security / header                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                      |         |                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------|
| signed firmware update                                                                                                                                                                                                                                                                                                                                             | No                                                                                                                                                                                                                                   |         |                |
| data integrity                                                                                                                                                                                                                                                                                                                                                     | No                                                                                                                                                                                                                                   |         |                |
| Ambient conditions                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                      |         |                |
| Ambient temperature during operation                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                      |         |                |
| <ul style="list-style-type: none"><li>horizontal installation, min.</li><li>horizontal installation, max.</li></ul>                                                                                                                                                                                                                                                | -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C<br>70 °C; = Tmax; see Derating BasedOn (e.g. manual), additionally Tmax > 60 °C max. 4 A aggregate current per module, max. 0.25 A per output                           |         |                |
| <ul style="list-style-type: none"><li>vertical installation, min.</li><li>vertical installation, max.</li></ul>                                                                                                                                                                                                                                                    | -40 °C; = Tmin; Startup @ -25 °C<br>60 °C                                                                                                                                                                                            |         |                |
| Altitude during operation relating to sea level                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                      |         |                |
| <ul style="list-style-type: none"><li>Installation altitude above sea level, max.</li><li>Ambient air temperature-barometric pressure-altitude</li></ul>                                                                                                                                                                                                           | 2 000 m<br>Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m)                                                                                                                                                            |         |                |
| Relative humidity                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                      |         |                |
| <ul style="list-style-type: none"><li>With condensation, tested in accordance with IEC 60068-2-38, max.</li></ul>                                                                                                                                                                                                                                                  | 100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation                                                                                                                                    |         |                |
| Resistance                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                      |         |                |
| Coolants and lubricants                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                      |         |                |
| <ul style="list-style-type: none"><li>Resistant to commercially available coolants and lubricants</li></ul>                                                                                                                                                                                                                                                        | Yes; Incl. diesel and oil droplets in the air                                                                                                                                                                                        |         |                |
| Use in stationary industrial systems                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                      |         |                |
| <ul style="list-style-type: none"><li>to biologically active substances according to EN 60721-3-3</li><li>to chemically active substances according to EN 60721-3-3</li><li>to mechanically active substances according to EN 60721-3-3</li></ul>                                                                                                                  | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request<br>Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *<br>Yes; Class 3S4 incl. sand, dust, * |         |                |
| Use on ships/at sea                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                      |         |                |
| <ul style="list-style-type: none"><li>to biologically active substances according to EN 60721-3-6</li><li>to chemically active substances according to EN 60721-3-6</li><li>to mechanically active substances according to EN 60721-3-6</li></ul>                                                                                                                  | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request<br>Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *<br>Yes; Class 6S3 incl. sand, dust; *                      |         |                |
| Usage in industrial process technology                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                      |         |                |
| <ul style="list-style-type: none"><li>Against chemically active substances acc. to EN 60654-4</li><li>Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04</li></ul>                                                                                                                                                         | Yes; Class 3 (excluding trichlorethylene)<br><br>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                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                      |         |                |
| <ul style="list-style-type: none"><li>Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li></ul>                                                                                                                                                                                                          | * The supplied plug covers must remain in place over the unused interfaces during operation!                                                                                                                                         |         |                |
| Conformal coating                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                      |         |                |
| <ul style="list-style-type: none"><li>Coatings for printed circuit board assemblies acc. to EN 61086</li><li>Protection against fouling acc. to EN 60664-3</li><li>Military testing according to MIL-I-46058C, Amendment 7</li><li>Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li></ul> | Yes; Class 2 for high reliability<br><br>Yes; Type 1 protection<br>Yes; Discoloration of coating possible during service life<br>Yes; Conformal coating, Class A                                                                     |         |                |
| Dimensions                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                      |         |                |
| Width                                                                                                                                                                                                                                                                                                                                                              | 35 mm                                                                                                                                                                                                                                |         |                |
| Height                                                                                                                                                                                                                                                                                                                                                             | 147 mm                                                                                                                                                                                                                               |         |                |
| Depth                                                                                                                                                                                                                                                                                                                                                              | 129 mm                                                                                                                                                                                                                               |         |                |
| Weights                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                      |         |                |
| Weight, approx.                                                                                                                                                                                                                                                                                                                                                    | 310 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 |  | EMV |



[Miscellaneous](#)[Manufacturer Declaration](#)

[KC](#)

|     |                      |             |
|-----|----------------------|-------------|
| EMV | Maritime application | Environment |
|-----|----------------------|-------------|







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