



Figure similar

SIPLUS S7-1200 SB 1221 4DI based on 6ES7221-3BD30-0XB0 with conformal coating, -40...+60 °C, start up -25 °C, digital inputs 4 DI 24 V DC 200 kHz

| General information                                             |                                                                                                                                              |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Product type designation                                        | SB 1221, DI 4x24 V DC 200 kHz                                                                                                                |
| based on                                                        | <a href="#">6ES7221-3BD30-0XB0</a>                                                                                                           |
| Engineering with                                                |                                                                                                                                              |
| • STEP 7 TIA Portal configurable/integrated from version        | see entry ID: 109746275                                                                                                                      |
| Input current                                                   |                                                                                                                                              |
| from backplane bus 5 V DC, typ.                                 | 40 mA                                                                                                                                        |
| Power loss                                                      |                                                                                                                                              |
| Power loss, typ.                                                | 1 W                                                                                                                                          |
| Digital inputs                                                  |                                                                                                                                              |
| Number of digital inputs                                        | 4; Current-sourcing                                                                                                                          |
| • in groups of                                                  | 4                                                                                                                                            |
| Input characteristic curve in accordance with IEC 61131, type 2 | Yes                                                                                                                                          |
| Input voltage                                                   |                                                                                                                                              |
| • Rated value (DC)                                              | 24 V                                                                                                                                         |
| • for signal "0"                                                | (L+ minus 5.0 V DC) ... L+ (1.4 ... 0 mA)                                                                                                    |
| • for signal "1"                                                | 0 V ... (L+ minus 10 V DC (10 ... 2.9 mA))                                                                                                   |
| Input current                                                   |                                                                                                                                              |
| • for signal "0", max. (permissible quiescent current)          | 1.4 mA                                                                                                                                       |
| • for signal "1", min.                                          | 2.9 mA                                                                                                                                       |
| • for signal "1", typ.                                          | 7 mA                                                                                                                                         |
| Input delay (for rated value of input voltage)                  |                                                                                                                                              |
| for standard inputs                                             |                                                                                                                                              |
| — parameterizable                                               | Yes; 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 ms |
| for interrupt inputs                                            |                                                                                                                                              |
| — parameterizable                                               | Yes                                                                                                                                          |
| for technological functions                                     |                                                                                                                                              |
| — parameterizable                                               | Yes                                                                                                                                          |
| Cable length                                                    |                                                                                                                                              |
| • shielded, max.                                                | 50 m; shielded, twisted pair                                                                                                                 |
| Interrupts/diagnostics/status information                       |                                                                                                                                              |
| Diagnostics indication LED                                      |                                                                                                                                              |
| • for status of the inputs                                      | Yes                                                                                                                                          |
| Ambient conditions                                              |                                                                                                                                              |
| Free fall                                                       |                                                                                                                                              |
| • Fall height, max.                                             | 0.3 m; five times, in product package                                                                                                        |
| Ambient temperature during operation                            |                                                                                                                                              |
| • min.                                                          | -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C                                                                                 |

|                                                                                                                         |                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • max.                                                                                                                  | 60 °C; = Tmax                                                                                                                                                                                                   |
| Ambient temperature during storage/transportation                                                                       |                                                                                                                                                                                                                 |
| • min.                                                                                                                  | -40 °C                                                                                                                                                                                                          |
| • max.                                                                                                                  | 70 °C                                                                                                                                                                                                           |
| Air pressure acc. to IEC 60068-2-13                                                                                     |                                                                                                                                                                                                                 |
| • Storage/transport, min.                                                                                               | 660 hPa                                                                                                                                                                                                         |
| • Storage/transport, max.                                                                                               | 1 080 hPa                                                                                                                                                                                                       |
| Altitude during operation relating to sea level                                                                         |                                                                                                                                                                                                                 |
| • Installation altitude above sea level, max.                                                                           | 5 000 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) |
| Relative humidity                                                                                                       |                                                                                                                                                                                                                 |
| • With condensation, tested in accordance with IEC 60068-2-38, max.                                                     | 100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation                                                                                                               |
| Resistance                                                                                                              |                                                                                                                                                                                                                 |
| 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                                                                                                                                                                                 |
| Mechanics/material                                                                                                      |                                                                                                                                                                                                                 |
| Enclosure material (front)                                                                                              |                                                                                                                                                                                                                 |
| • Plastic                                                                                                               | Yes                                                                                                                                                                                                             |
| Dimensions                                                                                                              |                                                                                                                                                                                                                 |
| Width                                                                                                                   | 38 mm                                                                                                                                                                                                           |
| Height                                                                                                                  | 62 mm                                                                                                                                                                                                           |
| Depth                                                                                                                   | 21 mm                                                                                                                                                                                                           |
| Weights                                                                                                                 |                                                                                                                                                                                                                 |
| Weight, approx.                                                                                                         | 40 g                                                                                                                                                                                                            |
| last modified:                                                                                                          | 5/29/2024                                                                                                                    |