

SIPLUS S7-1200 SM 1221 16DI -25...+70°C with conformal coating based on 6ES7221-1BH32-0XB0 . Digital input 16 DI, 24 V DC, Sink/Source



Figure similar

| General information | |
|---|------------------------|
| Product type designation | SM 1221, DI 16x24 V DC |
| Supply voltage | |
| Rated value (DC) | 24 V |
| 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. | 130 mA |
| Digital inputs | |
| <ul style="list-style-type: none"> from load voltage L+ (without load), max. | 4 mA; per channel |
| Output voltage | |
| Power supply to the transmitters | |
| <ul style="list-style-type: none"> present | Yes |
| Power loss | |
| Power loss, typ. | 2.5 W |

| Digital inputs | |
|---|---|
| Number of digital inputs | 16 |
| • in groups of | 4 |
| Input characteristic curve in accordance with IEC 61131, type 1 | Yes |
| Number of simultaneously controllable inputs | |
| all mounting positions | |
| — up to 40 °C, max. | 16 |
| horizontal installation | |
| — up to 40 °C, max. | 16 |
| — up to 50 °C, max. | 16 |
| vertical installation | |
| — up to 40 °C, max. | 16 |
| Input voltage | |
| • Rated value (DC) | 24 V |
| • for signal "0" | 5 V DC at 1 mA |
| • for signal "1" | 15 V DC at 2.5 mA |
| Input current | |
| • for signal "0", max. (permissible quiescent current) | 1 mA |
| • for signal "1", min. | 2.5 mA |
| • for signal "1", typ. | 4 mA |
| Input delay (for rated value of input voltage) | |
| for standard inputs | |
| — parameterizable | Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four |
| for interrupt inputs | |
| — parameterizable | Yes |
| Cable length | |
| • shielded, max. | 500 m |
| • unshielded, max. | 300 m |
| Interrupts/diagnostics/status information | |
| Diagnostics function | Yes |
| Alarms | |
| • Diagnostic alarm | Yes |
| Diagnostic messages | |
| • Monitoring the supply voltage | Yes |
| Diagnostics indication LED | |
| • for status of the inputs | Yes |
| • for maintenance | Yes |
| Potential separation | |
| Potential separation digital inputs | |

- between the channels, in groups of

4

Degree and class of protection

IP degree of protection IP20

Standards, approvals, certificates

Highest safety class achievable in safety mode

- Performance level according to ISO 13849-1 No
- SIL acc. to IEC 61508 No

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. 70 °C; = Tmax; Tmax > +60 °C number of simultaneously activated inputs 8 (no adjacent points) for horizontal mounting position
- At cold restart, min. -25 °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. 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 under condensation conditions)

Resistance

Coolants and lubricants

- Resistant to commercially available coolants and lubricants Yes

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 | |
| <ul style="list-style-type: none"> • Coatings for printed circuit board assemblies acc. to EN 61086 • Protection against fouling acc. to EN 60664-3 • Military testing according to MIL-I-46058C, Amendment 7 • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | <p>Yes</p> <p>Yes; Type 1 protection</p> <p>Yes; Discoloration of coating possible during service life</p> <p>Yes; Conformal coating, Class A</p> |
| Connection method | |
| required front connector | Yes |
| Mechanics/material | |
| Enclosure material (front) <ul style="list-style-type: none"> • Plastic | Yes |
| Dimensions | |
| Width | 45 mm |
| Height | 100 mm |
| Depth | 75 mm |
| Weights | |
| Weight, approx. | 210 g |
| last modified: | 05/09/2020 |