SIEMENS

## Data sheet 6AG1321-1CH20-2AA0



Figure similar

***spare part*** SIPLUS S7-300 SM 321 based on 6ES7321-1CH20-0AA0 with conformal coating, -25…+70 °C, digital input isolated 16 DI, 48-125 V DC, 1x 20-pole

| | |
|---|---|
| **General information** | |
| based on | 6ES7321-1CH20-0AA0 |
| Product function | |
| ● Isochronous mode | No |
| **Supply voltage** | |
| Load voltage L+ | |
| ● Rated value (DC) | 48 V |
| ● permissible range, lower limit (DC) | 48 V |
| ● permissible range, upper limit (DC) | 125 V |
| **Input current** | |
| from backplane bus 5 V DC, max. | 40 mA |
| **Power loss** | |
| Power loss, typ. | 4.3 W |
| **Digital inputs** | |
| Number of digital inputs | 16 |
| Input characteristic curve in accordance with IEC 61131, type 1 | Yes |
| Number of simultaneously controllable inputs | |
| all mounting positions | |
| — up to 60 °C, max. | 8; 6 @ Ue 146 V |
| — up to 70 °C, max. | 6; 4 @ Ue 146 V |
| horizontal installation | |
| — up to 50 °C, max. | 8 |
| — up to 60 °C, max. | 8; 6 to Ue 146 V |
| Input voltage | |
| ● Type of input voltage | DC |
| ● Rated value (DC) | 48 V; 48 V DC to 125 V DC |
| ● for signal "0" | -146 V DC to +15 V DC |
| ● for signal "1" | 30 V DC to 146 V DC |
| Input current | |
| ● for signal "1", typ. | 3.5 mA |
| Input delay (for rated value of input voltage) | |
| for standard inputs | |
| — parameterizable | No |
| — at "0" to "1", min. | 0.1 ms |
| — at "0" to "1", max. | 3.5 ms |
| — at "1" to "0", min. | 0.7 ms |
| — at "1" to "0", max. | 3 ms |
| Cable length | |


© Copyright Siemes

| | |
|---|---|
| ● shielded, max. | 1 000 m |
| ● unshielded, max. | 600 m |
| **Encoder** | |
| Connectable encoders | |
| ● 2-wire sensor | Yes |
| — permissible quiescent current (2-wire sensor), max. | 1 mA |
| **Interrupts/diagnostics/status information** | |
| Alarms | No |
| Diagnostics function | No |
| Alarms | |
| ● Diagnostic alarm | No |
| ● Hardware interrupt | No |
| Diagnostics indication LED | |
| ● Group error SF (red) | No |
| ● Status indicator digital input (green) | Yes |
| **Potential separation** | |
| Potential separation digital inputs | |
| ● between the channels | No |
| ● between the channels, in groups of | 8 |
| ● between the channels and backplane bus | Yes; Optocoupler |
| **Isolation** | |
| Isolation tested with | 1 500 V DC |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| UL approval | Yes; File E239877 |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| EAC (formerly Gost-R) | Yes |
| Railway application | |
| ● EN 50155 | Yes; Sections 4, 5 and 12; no further agreements apply; T1, Category 1, Class A/B, EN 50155:2007 (see SIOS entry 109755985) |
| **Ambient conditions** | |
| Ambient temperature during operation | |
| ● min. | -25 °C; = Tmin |
| ● max. | 70 °C; = Tmax; for use on railway vehicles according to EN50155, the rated temperature range -25 ... +55 °C (T1) or 60 °C @ UL/ULhaz/ATEX/FM use applies |
| 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) |
| Relative humidity | |
| ● With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) |
| Resistance | |
| 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 land craft, rail vehicles and special-purpose vehicles | |
| — to biologically active substances according to EN 60721-3-5 | Yes; Class 5B2 mold, fungus and dry rot spores (with the exception of fauna); Class 5B3 on request |
| — to chemically active substances according to EN 60721-3-5 | Yes; Class 5C3 (RH < 75 %) incl. salt spray acc. to EN 50155 (ST2); * |
| — to mechanically active substances according to EN 60721-3-5 | Yes; Class 5S3 incl. sand, dust; * |


© Copyright Siemes

| | |
|---|---|
| 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! |
| **Connection method** | |
| required front connector | 20-pin |
| **Dimensions** | |
| Width | 40 mm |
| Height | 125 mm |
| Depth | 120 mm |
| **Weights** | |
| Weight, approx. | 200 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**

Manufacturer Declaration | Declaration of Conformity | China RoHS

**General Product Approval** | **EMV**

**last modified:** 5/29/2024


Subject to change without notice
© Copyright Siemens

© Copyright Siemes