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## Data sheet 6AG2222-1BF32-1XB0



Figure similar

SIPLUS S7-1200 SM 1222 8DQ T1 rail based on 6ES7222-1BF32-0XB0 with conformal coating, -25…+70 °C, OT1 with ST1/2 (+70 °C für 10 minutes), digital output 8 DQ, 24 V DC, transistor 0.5 A

| | |
|---|---|
| **General information** | |
| Product type designation | SM 1222, DQ 8x24 V DC/0.5 A |
| based on | 6ES7222-1BF32-0XB0 |
| **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 |
| **Power loss** | |
| Power loss, typ. | 1.5 W |
| **Digital outputs** | |
| Number of digital outputs | 8 |
| ● in groups of | 1 |
| Short-circuit protection | No; to be provided externally |
| Limitation of inductive shutdown voltage to | typ. (L+) -48 V |
| Switching capacity of the outputs | |
| ● with resistive load, max. | 0.5 A |
| ● on lamp load, max. | 5 W |
| Output voltage | |
| ● Rated value (DC) | 24 V |
| ● for signal "0", max. | 0.1 V; with 10 kOhm load |
| ● for signal "1", min. | 20 V DC |
| Output current | |
| ● for signal "1" rated value | 0.5 A |
| ● for signal "0" residual current, max. | 10 µA |
| Output delay with resistive load | |
| ● "0" to "1", max. | 50 µs |
| ● "1" to "0", max. | 200 µs |
| Total current of the outputs (per group) | |
| horizontal installation | |
| — up to 50 °C, max. | 4 A; Current per mass |
| Cable length | |
| ● shielded, max. | 500 m |
| ● unshielded, max. | 150 m |
| **Interrupts/diagnostics/status information** | |
| Diagnostics function | Yes |
| Alarms | |
| ● Diagnostic alarm | Yes |


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|---|---|
| Diagnoses | |
| ● Monitoring the supply voltage | Yes |
| Diagnostics indication LED | |
| ● for status of the outputs | Yes |
| **Potential separation** | |
| Potential separation digital outputs | |
| ● between the channels, in groups of | 1 |
| ● between the channels and backplane bus | 500 V AC |
| **Isolation** | |
| Isolation tested with | 750 V DC (type test) and according to EN 50155 (routine test) |
| **Degree and class of protection** | |
| IP degree of protection | IP20 |
| **Standards, approvals, certificates** | |
| 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 |
| Railway application | |
| ● EN 50121-3-2 | Yes; EMC for rail vehicles |
| ● EN 50121-4 | Yes; EMC for signal and telecommunications systems |
| ● EN 50124-1 | Yes; Railway applications - overvoltage category OV2; pollution degree PD2; rated surge voltage UNi = 0.5 kV; UNm = 24 V DC |
| ● EN 50125-1 | Yes; Rail vehicles - see ambient conditions |
| ● EN 50125-2 | Yes; Stationary electrical equipment - see ambient conditions |
| ● EN 50125-3 | Yes; Signal and telecommunications systems - see ambient conditions; vibrations and shocks: Application point outside of tracks (1 m to 3 m away from track) |
| ● EN 50155 | Yes; Rail vehicles - temperature class OT1, ST1/ST2, horizontal mounting position |
| ● EN 61373 | Yes; Rail vehicles - vibrations and shocks: Category 1 Class A/B |
| ● Fire protection acc. to EN 45545-2 | Yes; For proof of conformity, see Service & Support |
| **Ambient conditions** | |
| Free fall | |
| ● Fall height, max. | 0.3 m; five times, in product package |
| Ambient temperature during operation | |
| ● min. | -25 °C; = Tmin (incl. condensation/frost) |
| ● max. | 60 °C; = Tmax; +70 °C for 10 min (OT1, ST1/ST2 acc. to EN 50155) |
| ● vertical installation, min. | -25 °C; = Tmin |
| ● vertical installation, max. | 50 °C; = Tmax |
| 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 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 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity |


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| 60721-3-3 | 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 60068-2-52 (severity degree 3); * |
| — to mechanically active substances according to EN 60721-3-5 | Yes; Class 5S3 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 |
| ● Electronic equipment on rolling stock acc. to EN 50155 | Yes; Class PC2 protective coating acc. to EN 50155:2017 |
| ● 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. | 180 g |
| **Other** | |
| Note: | for use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A, Online Support article 109736776 |

**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**


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| General Product Approval | | | | | |
|---|---|---|---|---|---|
| Manufacturer Declaration | | | China RoHS | | |

| General Product Approval | | | EMV | | Railway |
|---|---|---|---|---|---|
| China RoHS | | | | | Confirmation |

| Environment |
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