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## Data sheet 6AG2158-3AD10-4XA0



Figure similar

SIPLUS PN/PN Coupler TX RAIL -40...+70°C TX with 85°C for 10min with conformal coating based on 6ES7158-3AD10-0XA0 . for deterministic data exchange between max.4 PN-Controller per subnet, also from subnet to subnet, PROFIsafe data exchange, I/O-, MSI-, MSO- and data record communication, redundant power supply, PN-connection via SIMATIC BusAdapter (BA), delivery w/o BusAdapter

| General information | |
|---|---|
| Product type designation | PN/PN coupler |
| Firmware version | |
| • FW update possible | Yes |
| **Product function** | |
| • I&M data | Yes; I&M0 to I&M3 |
| • Isochronous mode | No; For operation on isochronous bus |
| • Tool changer | Yes; Docking station and docking unit |
| • Local coupling, IO data | Yes |
| — Number of coupling modules | 16 |
| — Number of coupling submodules per module | 4; 1x write, 3x read |
| • Local coupling, data records | Yes |
| — Number of coupling modules | 16 |
| — Number of coupling submodules per module | 4; 1x write, 3x read |
| — Record length, max. | 4 096 byte |


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| | |
|---|---|
| — FIFO depth in storage mode | 8 |
| **Installation type/mounting** | |
| Mounting | Mounting rail 7.5 mm and 15 mm |
| **Supply voltage** | |
| Rated value (DC) | 24 V |
| permissible range, lower limit (DC) | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V |
| Reverse polarity protection | Yes |
| Mains buffering | |
| • Mains/voltage failure stored energy time | 10 ms |
| **Input current** | |
| Current consumption, max. | 360 mA; For 19.2 V input voltage at the right-hand supply terminal, including 2 plugged BA 2x LC |
| Inrush current, max. | 1.6 A |
| $I^2t$ | 0.031 $A^2 \cdot s$ |
| from supply voltage 1L+, max. | 320 mA; For 19.2 V input voltage at the left-hand supply terminal, including 2 plugged BA 2x LC |
| **Power loss** | |
| Power loss, typ. | 4 W; For 24 V input voltage and 2 plugged BA 2x RJ45 If BusAdapters with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC) |
| **Address area** | |
| Address space per module | |
| • Address space per module, max. | 254 byte; max. 254 bytes of input data and 253 bytes of output data |
| Address space per station | |
| • Address space per station, max. | 1 440 byte; per input / output |
| **Hardware configuration** | |
| Submodules | |
| • Number of submodules per station, max. | 116 |
| **Interfaces** | |
| Number of PROFINET interfaces | 2; One PROFINET interface per line side |
| Optical interface | Yes; Via SIMATIC BusAdapter |
| Transmission rate, max. | 100 Mbit/s |
| **1. Interface** | |
| Interface types | |
| • Number of ports | 2; via BusAdapter |
| • integrated switch | Yes |


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|---|---|
| • BusAdapter (PROFINET) | Yes; Compatible BusAdapter: BA 2x RJ45, BA 2x FC, BA 2x SCRJ, BA SCRJ / RJ45, BA SCRJ / FC, BA 2x LC, BA LC / RJ45, BA LC / FC |
| Protocols | |
| • PROFINET IO Device | Yes |
| • Open IE communication | Yes |
| • Media redundancy | Yes; As MRP or MRPD client; max. 50 or 30 devices in the ring |
| **2. Interface** | |
| Interface types | |
| • Number of ports | 2; via BusAdapter |
| • integrated switch | Yes |
| Protocols | |
| • PROFINET IO Device | Yes |
| • Open IE communication | Yes |
| • Media redundancy | Yes; As MRP or MRPD client; max. 50 or 30 devices in the ring |
| **Interface types** | |
| RJ 45 (Ethernet) | |
| • Transmission procedure | PROFINET with 100 Mbit/s full duplex (100BASE-TX) |
| • 10 Mbps | No |
| • 100 Mbps | Yes; PROFINET with 100 Mbit/s full duplex (100BASE-TX) |
| • Autonegotiation | Yes |
| • Autocrossing | Yes |
| **Protocols** | |
| Supports protocol for PROFINET IO | Yes |
| Protocols (Ethernet) | |
| • TCP/IP | Yes |
| • SNMP | Yes |
| • LLDP | Yes |
| • ping | Yes |
| • ARP | Yes |
| PROFINET IO Device | |
| Services | |
| — IRT | Yes |
| — PROFIenergy | No |
| — Prioritized startup | Yes |
| — Shared device | Yes |
| — Number of IO Controllers with shared device, max. | 4; per line side |
| Redundancy mode | |
| • PROFINET system redundancy (S2) | Yes; NAP S2 acc. to IEC |
| Media redundancy | |


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|---|---|
| — MRP | Yes |
| — MRPD | Yes |
| Open IE communication | |
| • TCP/IP | Yes |
| • SNMP | Yes |
| • LLDP | Yes |
| **Interrupts/diagnostics/status information** | |
| Status indicator | Yes |
| Alarms | Yes |
| Diagnostics function | Yes; Parameterizable |
| Diagnostics indication LED | |
| • RUN LED | Yes; green LED |
| • ERROR LED | Yes; red LED |
| • MAINT LED | Yes; Yellow LED |
| • Monitoring of the supply voltage (PWR-LED) | Yes; green PWR LED |
| • Connection to network LINK (green) | Yes; 2x green link LEDs on BusAdapter |
| **Potential separation** | |
| between supply voltage and electronics | Yes; to power input 2 |
| between Ethernet and electronics | Yes |
| **Isolation** | |
| Isolation tested with | 707 V DC (type test) and according to EN 50155 (routine test) |
| **Standards, approvals, certificates** | |
| Network loading class | 3 |
| Security level | According to Security Level 1 Test Cases V1.1.4 |
| 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 Tx, horizontal mounting position, salt spray Class ST2 |
| • EN 61373 | Yes; Rail vehicles - vibrations and shocks: Category 1 Class A/B |
| • Fire protection acc. to EN 45545-2 | Yes; Rail vehicles - verification on request |
| **Ambient conditions** | |
| Ambient temperature during operation | |
| • min. | -40 °C; = Tmin |


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| | |
|---|---|
| • max. | 70 °C; = Tmax; +85 °C for 10 min (Tx acc. to EN 50155) |
| 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 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; * |
| 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 |


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| | |
|---|---|
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A |

| Mechanics/material | |
|---|---|
| Strain relief | Yes; Optional, for RJ45 and FC BusAdapter only |

| Dimensions | |
|---|---|
| Width | 100 mm; Minimized with good handling |
| Height | 117 mm |
| Depth | 74 mm; with mounting rail |

| Weights | |
|---|---|
| Weight, approx. | 200 g; without BusAdapter |

| Other | |
|---|---|
| Note: | for use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A, Online Support article 109736776 |

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