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## Data sheet 6AG2155-6AU02-4BN0



Figure similar

SIPLUS ET 200SP IM155-6PN ST RAIL based on 6ES7155-6AU02-0BN0 with conformal coating, -40...+70 °C interface modules IM 155-6 PN ST, max. 32 I/O modules, and 16 ET 200AL modules, multi hot swap, optional PN strain relief, including server module (6AG1193-6PA00-7AA0)

| | |
|---|---|
| **General information** | |
| Product type designation | IM 155-6 PN ST |
| Firmware version | V6.4.0 |
| ● FW update possible | Yes |
| Vendor identification (VendorID) | 002AH |
| Device identifier (DeviceID) | 0313H |
| Manufacturer ID according to ODVA (VendorID) | 04E3H |
| Device ID according to ODVA (Product code) | 0FA2H |
| based on | 6ES7155-6AU02-0BN0 |
| Product function | |
| ● I&M data | Yes; I&M0 to I&M4 |
| ● Module swapping during operation (hot swapping) | Yes; Multi-hot swapping |
| ● Isochronous mode | No |
| ● IRT | Yes |
| ● Local coupling, IO data | Yes |
| — Number of coupling modules | 6; 1x output + max. 5x input |
| Engineering with | |
| ● STEP 7 TIA Portal configurable/integrated from version | see entry ID: 109746275 |
| ● PROFINET from GSD version/GSD revision | GSDML V2.45 |
| **Configuration control** | |
| via dataset | Yes |
| **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 |
| Short-circuit protection | Yes |
| Mains buffering | |
| ● Mains/voltage failure stored energy time | 10 ms |
| **Input current** | |
| Current consumption (rated value) | 350 mA |
| Current consumption, max. | 450 mA |
| Inrush current, max. | 1 A |
| $I^2t$ | 0.05 $A^2 \cdot s$ |
| **Power loss** | |
| Power loss, typ. | 1.8 W |
| **Address area** | |
| Address space per module | |


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|---|---|
| ● Address space per module, max. | 288 byte; For input and output data respectively |
| Address space per station | |
| ● Address space per station, max. | 1 440 byte |
| **Hardware configuration** | |
| Rack | |
| ● Quantity of operable ET 200SP modules, max. | 32 |
| ● Quantity of operable ET 200AL modules, max. | 16 |
| Submodules | |
| ● Number of submodules per station, max. | 256 |
| **Interfaces** | |
| Transmission procedure | 100BASE-TX |
| Number of PROFINET interfaces | 1; 2 ports (switch) |
| **1. Interface** | |
| Interface types | |
| ● RJ 45 (Ethernet) | Yes; with BusAdapter |
| ● Number of ports | 2; with BusAdapter |
| ● integrated switch | Yes |
| ● BusAdapter (PROFINET) | Yes |
| Protocols | |
| ● PROFINET IO Device | Yes |
| ● Open IE communication | Yes |
| ● Media redundancy | Yes; PROFINET MRP client |
| PROFINET IO Device | |
| Services | |
| — IRT | Yes; 1 ms to 4 ms at an interval of 125 µs |
| — Dynamic Frame Packing (DFP) | Yes |
| — Fast Forwarding | Yes |
| — Fragmentation | Yes |
| — PROFIenergy | Yes |
| — Prioritized startup | Yes |
| — Shared device | Yes |
| — Number of IO Controllers with shared device, max. | 4 |
| **Interface types** | |
| RJ 45 (Ethernet) | |
| ● Transmission procedure | PROFINET with 100 Mbit/s full duplex (100BASE-TX) |
| ● 100 Mbps | Yes |
| ● Autonegotiation | Yes |
| ● Autocrossing | Yes |
| **Protocols** | |
| Supports protocol for PROFINET IO | Yes |
| PROFIsafe | Yes |
| PROFIBUS | No |
| EtherNet/IP | No |
| Modbus TCP | No |
| Redundancy mode | |
| ● PROFINET system redundancy (S2) | No |
| ● PROFINET system redundancy (R1) | No |
| Media redundancy | |
| — MRP | Yes |
| — MRPD | Yes |
| Open IE communication | |
| ● TCP/IP | Yes |
| ● UDP | Yes |
| ● SNMP | Yes |
| ● LLDP | Yes |
| ● ARP | Yes |
| ● IGMP | Yes |
| ● Multicast | Yes |
| ● Broadcast | Yes |


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|---|---|
| ● IPv4 | Yes |
| ● IPv6 | No |
| **Interrupts/diagnostics/status information** | |
| Status indicator | Yes |
| Alarms | Yes |
| Diagnostics function | Yes |
| 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 display LINK TX/RX | Yes; 2x green link LEDs on BusAdapter |
| **Potential separation** | |
| between backplane bus and electronics | No |
| between PROFINET and all other circuits | Yes; 1500 V AC (type test) |
| between supply and all other circuits | No |
| **Permissible potential difference** | |
| between different circuits | Safety extra low voltage SELV |
| **Isolation** | |
| Isolation tested with | 707 V DC (type test) |
| **Standards, approvals, certificates** | |
| Network loading class | 3 |
| Railway application | |
| ● EN 50121-3-2 | Yes; EMC for rail vehicles |
| ● EN 50121-4 | Yes; EMC for signal and telecommunications systems |
| ● EN 50121-5 | Yes; EMC for fixed installations and railway power supply equipment |
| ● EN 50124-1 | Yes; Railway applications - overvoltage category OV2; pollution degree PD2; rated surge voltage UNi = 0.5 kV |
| ● 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 OT4, 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 |
| **Security** | |
| PROFINET Security Class | 1 |
| signed firmware update | Yes |
| securely removing data | Yes |
| data integrity | Yes |
| **Ambient conditions** | |
| Ambient temperature during operation | |
| ● horizontal installation, min. | -40 °C; = Tmin (incl. condensation/frost) |
| ● horizontal installation, max. | 70 °C; = Tmax; +85 °C for 10 min (OT4, ST1/ST2 acc. to EN 50155) |
| ● vertical installation, min. | -40 °C; = Tmin |
| ● vertical installation, max. | 50 °C; = Tmax |
| 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 |


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|---|---|
| — 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, * |
| — Against mechanical environmental conditions acc. to EN 60721-3-3 | Yes; Class 3M8 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0//6AG1193-6AB00-0AA0) |
| 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; * |
| — Against mechanical environmental conditions acc. to EN 60721-3-5 | Yes; Class 5M2 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0) |
| — against mechanical environmental conditions in agriculture acc. to ISO 15003 | Yes; Level 1 (Location LE) using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0/6AG1193-6AB00-0AA0) |
| Use on ships/at sea | |
| — to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna) |
| — 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; * |
| — Against mechanical environmental conditions acc. to EN 60721-3-6 | Yes; class 6M4 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0/6AG1193-6AB00-0AA0) |
| 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 |
| ● 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** | |
| ET-Connection | |
| ● via BU/BA Send | Yes; + 16 ET 200AL modules |
| **Mechanics/material** | |
| Strain relief | Yes; Optional |
| **Dimensions** | |
| Width | 50 mm |
| Height | 117 mm |
| Depth | 74 mm |
| **Weights** | |
| Weight, approx. | 125 g; without BusAdapter |

**Classifications**

| | Version | Classification |
|---|---|---|
| eClass | 16 | 27-24-26-08 |
| eClass | 14 | 27-24-26-08 |
| eClass | 12 | 27-24-26-08 |
| eClass | 9.1 | 27-24-26-08 |
| eClass | 9 | 27-24-26-08 |


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|---|---|---|
| eClass | 8 | 27-24-26-08 |
| eClass | 7.1 | 27-24-26-08 |
| eClass | 6 | 27-24-26-08 |
| ETIM | 10 | EC001604 |
| ETIM | 9 | EC001604 |
| ETIM | 8 | EC001604 |
| ETIM | 7 | EC001604 |

## Approvals / Certificates

### General Product Approval

Manufacturer Declaration

China RoHS

### General Product Approval

### EMV

### Railway

Manufacturer Declaration

Confirmation

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