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Data sheet 6AG2155-6MU01-4CN0



Figure similar

SIPLUS ET 200SP IM155-6 MF HF rail based on 6ES7155-6MU01-0CN0 with conformal coating OT4: -40...+70 °C ST1/2: 85 °C for 10 minutes multi-fieldbus interface module PN IO, Modbus TCP, max. 64 I/O modules and 16 ET 200AL modules, S2 redundancy, multi hot swap, 0.25 ms, isochronous mode, optional PN cable grip PN security class 1 incl. server module (6AG1193-6PA00-7AA0)

General information	
Product type designation	IM 155-6 MF HF
Firmware version	
● FW update possible	Yes
Vendor identification (VendorID)	002AH
Device identifier (DeviceID)	0313H
Manufacturer ID according to ODVA (VendorID)	0x04E3
Device ID according to ODVA (Product code)	0FA2H
based on	6ES7155-6MU01-0CN0
Product function	
● I&M data	Yes; I&M0 to I&M4
● Module swapping during operation (hot swapping)	Yes; Multi-hot swapping
● Isochronous mode	Yes
● Tool changer	Yes; Docking station and docking unit
● 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
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)	550 mA
Current consumption, max.	650 mA
Inrush current, max.	1 A
I^2t	0.05 $A^2 \cdot s$
Power loss	
Power loss, typ.	2 W
Address area	
Address space per module	
● Address space per module, max.	288 byte; For input and output data respectively
Address space per station	

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● Address space per station, max.	1 440 byte
Hardware configuration	
Rack	
● Quantity of operable ET 200SP modules, max.	64; > 60 °C ambient temperature: 48 modules
Submodules	
● Number of submodules per station, max.	256
Interfaces	
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; 250 µs to 4 ms in 125 µs frame
— PROFIenergy	Yes
— Prioritized startup	Yes
— Shared device	Yes
— Number of IO Controllers with shared device, max.	14; 2x PN controller + 2x EtherNet/IP scanner + 10x Modbus TCP master
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	Yes
Modbus TCP	Yes
Number of connections	
● Number of MtM communication relationships/connections, max.	16
Redundancy mode	
● PROFINET system redundancy (S2)	Yes; NAP S2
● H-Sync forwarding	Yes
Media redundancy	
— MRP	Yes
— MRPD	Yes
EtherNet/IP	
Services	
— CIP Implicit Messaging	Yes
— CIP Explicit Messaging	Yes
— CIP Safety	No
— Configuration control via Explicit Messaging	No
— Shared device	Yes; 2x PN controller + 2x EtherNet/IP scanner + 10x Modbus TCP master
— Number of scanners with shared device, max.	2
Updating times	
— Requested Packet Interval (RPI)	2 ms
Address area	
— Address space per module, max.	288 byte; (246 byte outputs / 288 byte inputs)
— ForwardOpen (Class1 & 32 bit Header)	500 byte; (246 byte outputs / 500 byte inputs)
— LargeForwardOpen (Class3)	4 002 byte
Connections	

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— Number of rack connections	2
Modbus TCP	
Services	
— read coils (code=1)	Yes
— read discrete inputs (code=2)	Yes
— Read Holding Registers (Code=3)	Yes
— write single coil (code=5)	Yes
— write multiple coils (code=15)	Yes
— Write Multiple Registers (Code=16)	Yes
— Parameter change by master	Yes
— Modbus TCP Security Protocol	No
Address space per station	
— Address space per station, max.	500 byte; (246 byte outputs / 500 byte inputs)
— Access-consistent address space	250 byte; (246 byte outputs / 250 byte inputs)
Updating time	
— I/O request interval	2 ms
Connections	
— number of connections per device	9; (1x inputs / 2x outputs / 4x volatile registers / 2x Device Info)
Open IE communication	
● TCP/IP	Yes
● UDP	Yes
● SNMP	Yes
● LLDP	Yes
● ARP	Yes
● IGMP	Yes
● Multicast	Yes
● Broadcast	Yes
● IPv4	Yes
● IPv6	No
Isochronous mode	
Equidistance	Yes
shortest clock pulse	250 µs
max. cycle	4 ms
Bus cycle time (TDP), min.	250 µs
Jitter, max.	1 µs
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
● NS LED	Yes; green/red LED
● MS LED	Yes; green/red LED
● IO LED	Yes; red-green-yellow 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	750 V DC (type test) and according to EN 50155 (routine test)
Standards, approvals, certificates	
Network loading class	3
Railway application	
● EN 50121-3-2	Yes; EMC for rail vehicles

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● 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; 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 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
product functions / security / header	
PROFINET Security Class	1
signed firmware update	Yes
Secure Boot	No
safely 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
— 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 (6AG1193-6AA00-0AA0/6AG1193-6AB00-0AA0)
— 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)
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	Yes; Class 2 for high reliability

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61086	
● 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
Other	
Note:	for use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A, Online Support article 109736776

Classifications

	Version	Classification
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
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				Railway
Manufacturer Declaration	CE EG-Konf.	UKCA	China RoHS	Confirmation

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