



Figure similar

SIPLUS PN/PN Coupler TX rail based on 6ES7158-3AD10-0XA0 with conformal coating, -40...+70 °C, OT4 with ST1/2 (+85 °C for 10 minutes), for deterministic data exchange between max. 4 PN controllers per side also across network boundaries, transmission via PROFI-safe, I/O, MSI, MSO and data set communication, redundant current feeded PN connection via SIMATIC BusAdapter (BA), supplied without BusAdapter

General information	
Product type designation	PN/PN coupler
Firmware version	
• FW update possible	Yes
based on	6ES7158-3AD10-0XA0
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
— FIFO depth in storage mode	8
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	see entry ID: 109746275
• PROFINET from GSD version/GSD revision	GSDML V2.4.x
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 ² t	0.031 A ² ·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
- 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

PROFINET IO Device

Services

- IRT Yes
- Dynamic Frame Packing (DFP) Yes
- Prioritized startup Yes
- Shared device Yes

2. Interface

Interface types

- Number of ports 2; via BusAdapter
- integrated switch Yes
- 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
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PROFINET IO Device

Services

- IRT Yes
- Dynamic Frame Packing (DFP) Yes
- Prioritized startup Yes
- Shared device Yes

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

EtherNet/IP No

Protocols (Ethernet)

- TCP/IP Yes
- SNMP Yes
- LLDP Yes

• ping	Yes
• ARP	Yes
PROFINET IO Device	
Services	
— IRT	Yes
— PROFINET energy	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
• PROFINET system redundancy (R1)	No
• H-Sync forwarding	Yes
Media redundancy	
— 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
• LINK LED	Yes; 2x green link LEDs on BusAdapter
• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
Potential separation	
between supply voltage and electronics	Yes; to power input 2
between Ethernet and electronics	Yes
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
• 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 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
Ambient conditions	
Ambient temperature during operation	
• min.	-40 °C; = Tmin (incl. condensation/frost)
• max.	70 °C; = Tmax; +85 °C for 10 min (OT4, ST1/ST2 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		
<ul style="list-style-type: none"> 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)	
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)	
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		
<ul style="list-style-type: none"> Coatings for printed circuit board assemblies acc. to EN 61086 Protection against fouling acc. to EN 60664-3 Electronic equipment on rolling stock acc. to EN 50155 Military testing according to MIL-I-46058C, Amendment 7 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A 	<p>Yes; Class 2 for high reliability</p> <p>Yes; Type 1 protection</p> <p>Yes; Class PC2 protective coating acc. to EN 50155:2017</p> <p>Yes; Discoloration of coating possible during service life</p> <p>Yes; Conformal coating, Class A</p>	
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	
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
IDEA	4	3564
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

[Manufacturer Declaration](#)



[China RoHS](#)



General Product Approval

EMV

Railway

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[Confirmation](#)

last modified:

5/21/2026