

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



Figure similar

General information	
Product type designation	PN/PN coupler
Firmware version	
<ul style="list-style-type: none"> FW update possible 	Yes
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> Isochronous mode 	No; For operation on isochronous bus
<ul style="list-style-type: none"> Tool changer 	Yes; Docking station and docking unit
<ul style="list-style-type: none"> Local coupling, IO data 	Yes
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Number of coupling modules 	16
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Number of coupling submodules per module 	4; 1x write, 3x read
<ul style="list-style-type: none"> Local coupling, data records 	Yes
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Number of coupling modules 	16
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Number of coupling submodules per module 	4; 1x write, 3x read
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Record length, max. 	4 096 byte

— 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 ·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
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	

— 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

• 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

- 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

last modified:

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