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Data sheet 6ES7158-3AD10-0XA0



SIMATIC PN/PN Coupler 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	V6.0
● FW update possible	Yes
Vendor identification (VendorID)	002AH
Device identifier (DeviceID)	0604H
Product function	
● I&M data	Yes; I&M0 to I&M3
● Isochronous mode	Yes; 500 µs
● Tool changer	Yes; Docking station and docking unit
● Local coupling, IO data	Yes
— Number of coupling modules	16; in non-isochronous mode, otherwise 3
— Number of coupling submodules per module	4; 1x write, 3x read in non-isochronous mode, otherwise see description in the manual
● Local coupling, data records	Yes; in non-isochronous mode
— 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	V20 or higher
● STEP 7 configurable/integrated from version	V5.7 SP3
● 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^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	

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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; via BusAdapter
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
— PROFIenergy	No
— Prioritized startup	Yes; in non-isochronous mode
— Shared device	Yes; in non-isochronous mode
— Number of IO Controllers with shared device, max.	4; per line side
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
● 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
— PROFIenergy	No
— Prioritized startup	Yes; in non-isochronous mode
— Shared device	Yes; in non-isochronous mode
— Number of IO Controllers with shared device, max.	4; per line side
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

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EtherNet/IP	No
Protocols (Ethernet)	
● TCP/IP	Yes
● SNMP	Yes
● LLDP	Yes
● ping	Yes
● ARP	Yes
Redundancy mode	
● PROFINET system redundancy (S2)	Yes; NAP S2 acc. to IEC, only in non-isochronous mode
● 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
● Monitoring 24 V voltage supply ON (green)	Yes; for each side
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)
Standards, approvals, certificates	
Network loading class	3
Security	
PROFINET Security Class	1
Ambient conditions	
Ambient temperature during operation	
● min.	-30 °C; From FS05
● max.	60 °C; = Tmax for horizontal installation; for vertical installation Tmax = 50 °C
Altitude during operation relating to sea level	
● Installation altitude above sea level, max.	5 000 m; restrictions for installation altitudes > 2 000 m, see section "Climatic and mechanical environmental conditions"
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
Classifications	

	Version	Classification
eClass	16	27-24-26-08
eClass	14	27-24-26-08
eClass	12	27-24-26-08

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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

Miscellaneous | Manufacturer Declaration

General Product Approval | EMV | For use in hazardous locations

China RoHS

For use in hazardous locations

FM | CCC-Ex | Type Examination Certificate | Miscellaneous

For use in hazardous locations | Maritime application

CCC-Ex | NK / Nippon Kaiji Kyokai

Maritime application | Industrial Communication

CCS (China Classification Society) | KR (Korean Register of Shipping) | PROFINET

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