

PRA-ES8P2S Ethernet switch, 8xPoE, 2xSFP

PRAESENSA



The PRA-ES8P2S is a compact, DIN-rail mounted Ethernet switch with eight Gigabit copper ports. It supports Power over Ethernet (PoE) and two Gigabit SFP combo ports. This Ethernet switch is an OEM switch, made for Bosch by Advantech for use in Bosch Public Address and Voice Alarm systems. It is a preconfigured version of the EKI-7710G-2CP-AE switch, optimized for PRAESENSA. The PRA-ES8P2S is certified for EN 54-16 in combination with PRAESENSA systems. It can be used in addition to the switch ports of the PRAESENSA system controller and multifunction power supply. This is especially convenient in large systems where more SFP ports are needed for long distance interconnections on glass fiber or more PoE-enabled ports are needed to power PRAESENSA call stations.

Functions

Intended for PA/VA systems

- Managed industrial Gigabit Ethernet switch with convection cooling and DIN-rail mounting, designed for long term continuous operation.
- Redundant wide range DC power input.
- Protected against overloads and short circuits.
- Comes with pre-installed and pre-configured firmware for quick installation and optimum performance.
- Certified for EN 54-16 in combination with Bosch PRAESENSA systems.

- ▶ 8 x Gigabit ports with PoE
- ▶ 2 x Gigabit combo ports with SFP sockets for glass fiber transceivers
- ▶ Network redundancy via STP/MSTP/RSTP
- ▶ Dual power supply connections
- ▶ Fault relay

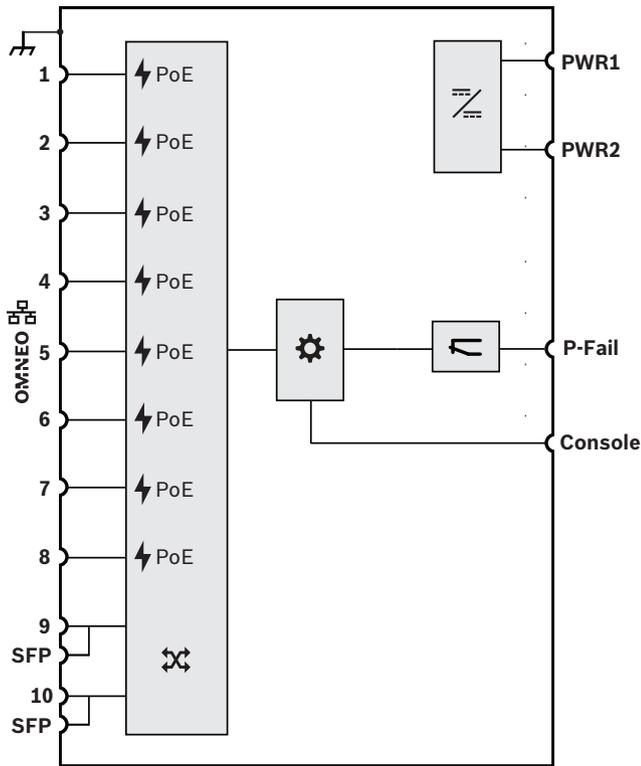
Advanced features

- Managed switch, configurable via web browser, with eight Gigabit copper ports with PoE and two SFP combo ports for PRA-SFPLX single mode and/or PRA-SFPSX multimode fiber transceiver modules.
- Deactivated Energy Efficient Ethernet (EEE) mode on all ports to avoid problems in combination with audio clock synchronization (IEEE 1588) in combination with OMNEO, Dante and AES67.
- Wire speed switching in hardware to avoid variable latency that may cause audio streaming problems.
- Full Quality of Service (QoS) through differentiated services (DiffServ) on all ports, compatible with OMNEO Docent diagnostic tool.
- Support for Rapid Spanning Tree Protocol (RSTP) according to IEEE 802.1d to create redundant loops.
- Fault output relay for fault reporting into PA/VA system.
- Large MAC-address table (8k-addresses) for large system broadcasting.
- Support for Simple Network Management Protocol (SNMP) and Link Layer Discovery Protocol (LLDP).
- All copper ports provide PoE (IEEE 802.3 af/at) to power PRAESENSA call stations or other devices.

Fault tolerance

- All ports support RSTP for loop connections to adjacent devices with recovery from a broken link.
- Dual redundant 24 to 48 V DC-inputs.

Connection and functional diagram



	Power over Ethernet power source		DC to DC converter
	Controller		Fault relay
	Socket for SFP module		OMNEO network switch

Front view



Front panel indicators

Port 1-10 ^	Link activity	Green
Port 1-10 v	100 Mbps network 1Gbps network	Yellow Green
PoE 1-8	PoE activated	Green
SYS	System is operating normally	Green
R.M.	Active when determining ring master	Green
PWR1	Power on power supply input 1	Green

PWR2	Power on power supply input 2	Green
Alarm	SFP port disconnected or link down	Red

Front panel control

Reset	System soft reset or factory reset	Switch
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Front panel connections

Port 1-8	Network port 1-8 with PoE	
Port 9-10	Network combo port 9-10	
Console	Console serial RS232 cable COM port	

Rear view



Top view



Top panel connections

	Chassis ground	
PWR1	24 to 48 VDC input 1	
PWR2	24 to 48 VDC input 2	
P-Fail	Fault relay	

Architects' and engineers' specifications

The Ethernet switch shall be a managed 10-port Gigabit switch with eight ports providing PoE and two ports providing SFP sockets for glass fiber transceivers. The switch shall have dual redundant, wide range DC power supply inputs for 24 to 48 V. It shall supervise its DC power supply inputs and port links, and have a fault relay output for fault reporting.

The Ethernet switch shall be DIN rail mountable with convection cooling. It shall be certified for EN 54-16 in combination with Bosch PRAESENSA systems for public address and voice alarm purposes. The switch shall be marked for UL and CE and be compliant with the RoHS directive. Warranty shall be three years minimum. The Ethernet switch shall be a Bosch PRA-ES8P2S.

Regulatory information

Emergency standard certifications

Europe	EN 54-16 (0560-CPR-182190000)
International	ISO 7240-16
Maritime applications	DNV GL Type Approval

Emergency standard compliance

Europe	EN 50849
UK	BS 5839-8

Regulatory areas

Safety	EN/IEC 62368-1
Immunity	EN 55035 EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8
Emissions	EN 55032 class A EN 61000-6-4 FCC-47 part 15B class A CAN ICES-003(A) CISPR 32
Environment	EN IEC 63000
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Railway applications	EN 50121-1 EN 50121-3-2 IEC 62236-1 IEC 62236-3-2 IEC 60571 clause 5.4, 5.5

Parts included

Quantity	Component
1	10-port industrial Ethernet switch
1	Screw connector
2	Wall-mounting bracket
1	DIN-rail mounting bracket and screws
1	Startup manual

Technical specifications

Quick overview

Operating voltage (VDC)	16.80 VDC – 62.40 VDC
Power consumption (W)	140 W maximum
PoE/PoE + power budget	120 W maximum
PoE/PoE + power per port	20 W maximum
PoE/PoE + standard	IEEE 802.3 af/at
Switch type	Managed
Number of RJ45 ports	10
Number of RJ45 connections with PoE	8
Number of SFP ports	2
MAC table size	8k
Fault output	Relay
Additional features	Pre-configured for PRAESENSA
Ethernet type	100BASE-TX; 1000BASE-T
Cooling	Convection
Mounting type	Rail-mounted; Wall-mounted
Protection	Watchdog; RSTP; Rate limiting; Storm control
IP rating	IP30
Operating temperature (°C)	-40 °C – 75 °C
Dimensions (H x W x D) (mm)	152 mm x 74 mm x 105 mm

Weight (kg)	1.30 kg
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Electrical

Power transfer	
Power supply input PWR1-2	
Input voltage	24–48 VDC
Input voltage tolerance	16.8–62.4 VDC
Power consumption (48 V)	
Active mode, no PoE	12 W
Active mode, with PoE	< 140 W
Power over Ethernet	
Standard	IEEE 802.3 af/at
Output power, all ports together	< 120 W
Output power, per port (1-8)	< 30 W

Supervision	
Redundant power failure	P-Fail relay / Alarm LED
Port link down	P-Fail relay / Alarm LED
Fiber link down	P-Fail relay / Alarm LED
Device status reporting	SNMP, SMTP

Network interface	
Ethernet	
Speed	100BASE-TX 1000BASE-T
Ports 1-8	RJ45
Ports 9-10	RJ45/SFP combo
Console	
Standard	RS232
Port	RJ45

Reliability	
MTBF	800,000 h

Functional

Switching	
MAC-address table size	8k
VLAN	IEEE 802.1Q
Group	256 (VLAN ID1-4094)
Arrange	Port based, Q-in-Q, GVRP
Multicast	IGMP snooping v1/v2/v3, MLD snooping, IGMP immediate leave

Switching	
Energy Efficient Ethernet	IEEE 802.3az EEE
Redundancy	IEEE 802.1D-STP IEEE 802.1s-MSTP IEEE 802.1w-RSTP

QoS	
Priority queue scheduling	SP, WRR
Class of service (CoS)	IEEE 802.1p, DiffServ (DSCP)
Rate limiting	Ingress, Egress
Link aggregation	IEEE 802.3ad Static, Dynamic (LACP)

Security	
Port security	Static, Dynamic
Authentication	IEEE 802.1X, port based
Storm control	Broadcast, Unknown multicast, Unknown unicast

Management	
DHCP	Client, Server
Access	SNMP v1/v2c/v3, RMON, Telnet, SSH, HTTP(S), CLI
Software upgrade	TFTP, HTTP (dual image)
NTP	SNTP client

Environmental

Climatic conditions	
Temperature	
Operating	-10–60 °C (-14–140 °F)
Storage and transport	-40–85 °C (-40–185 °F)
Humidity (non-condensing)	5–95%

Mechanical

Enclosure	
Dimensions (HxWxD)	152 x 74 x 105 mm (6.0 x 2.9 x 4.1 in)
Ingress protection	IP30
Mounting	TS35 DIN Rail (EN 60715), Wall-mounting
Case	Aluminum
Weight	1.3 kg (2.7 lb)

Ordering information

PRA-ES8P2S Ethernet switch, 8xPoE, 2xSFP
Managed 10-port Ethernet switch with PoE and SFP.
Order number **PRA-ES8P2S | F.01U.352.102**

Services
EWE-PRAES-IW 12 mths wrty ext Ethernet Switch
12 months warranty extension
Order number **EWE-PRAES-IW | F.01U.387.320**

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