PRA-ES8P2S Ethernet switch, 8xPoE, 2xSFP
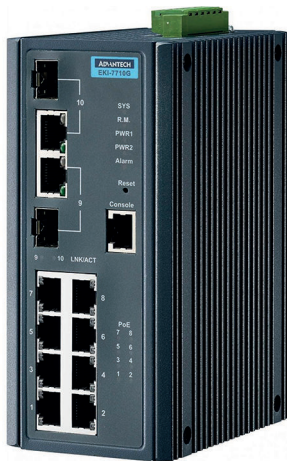
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BOSCH
Invented for life

▶ 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

The PRA-ES8P2S is a compact DIN-rail mounted Ethernet switch with eight Gigabit copper ports, supporting 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-2CPI-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.

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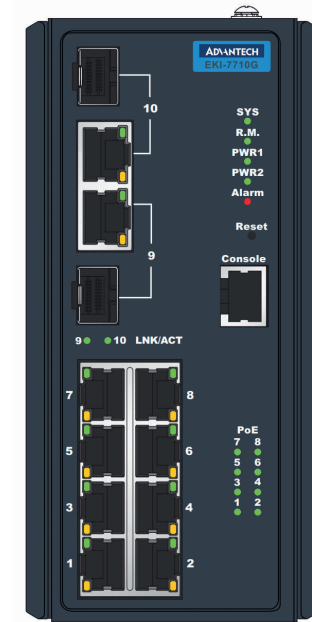
Fault tolerance
- All ports support RSTP for loop connections to adjacent devices with recovery from a broken link.
- Dual redundant 24 to 48 V DC-inputs.

Connection and functional diagram
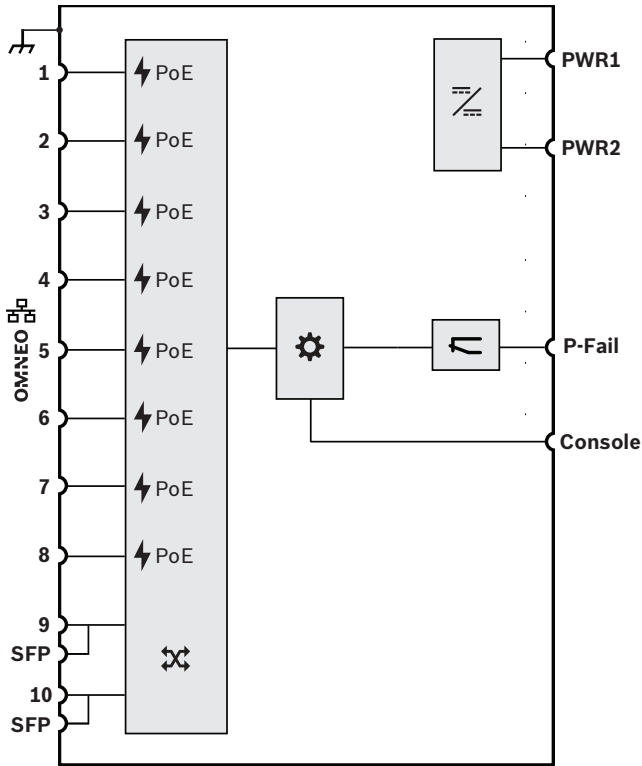
⚡	Power over Ethernet power source	⧦	DC to DC converter
⚙	Controller	⊏	Fault relay
SFP	Socket for SFP module	⤬	OMNEO network switch

Front view

Front panel indicators

| Port 1-10 ∧	Link activity	Green
Port 1-10 ∨	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

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
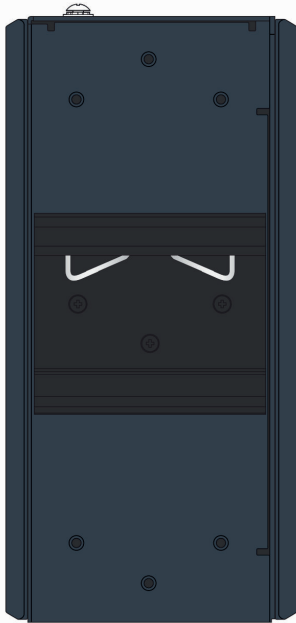
Top view
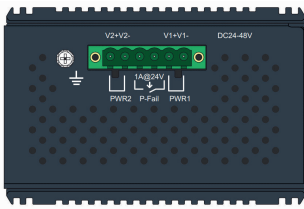
Top panel connections

⏚	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.

Certifications and approvals

Emergency standard certifications

Europe	EN 54-16
International	ISO 7240-16

Regulatory areas

Safety	UL 508
Immunity	EN 55024 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
Railway	EN 50121-4
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

Conformity declarations

Europe	CE/CPR
USA/Canada	FCC/c-UL
Korea	KE
Environment	RoHS

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
1	EKI Device Configuration Utility CD ROM

Technical specifications

Electrical

Power transfer

Power supply input PWR1-2
  Input voltage
  Input voltage tolerance
	24 to 48 VDC
	16.8 to 62.4 VDC

Power consumption (48 V)
  Active mode, no PoE
  Active mode, with PoE
	12 W
	< 140 W

Power over Ethernet
  Standard
  Output power, all ports together
  Output power, per port (1-8)
	IEEE 802.3 af/at
	< 120 W
	< 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
 	
  Ports 1-8
  Ports 9-10
	100BASE-TX
	1000BASE-T
	RJ45
	RJ45/SFP combo

Console
  Standard
  Port
	RS232
	RJ45

Functional

Switching

MAC-address table size	8k

VLAN
  Group
  Arrange
	IEEE 802.1Q
	256 (VLAN ID1-4094)
	Port based, Q-in-Q,
	GVRP

Multicast	IGMP snooping v1/v2/ v3, MLD snooping, IGMP immediate leave
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
 	
  Storage and transport
	-40 to +75 ℃
	(-40 to 167 ℉)
	-40 to +85 ℃
	(-40 to 185 ℉)

Humidity (non condensing)	5 to 95 %

Reliability

MTBF	> 800.000 h

Mechanical

Enclosure

Dimensions (WxHxD)	74 x 152 x 105 mm (2.9 x 6.0 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**