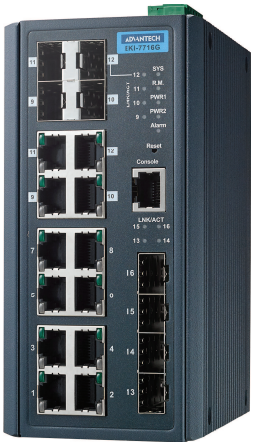
PRA-ES8E8S Ethernet switch, 8xGbE, 8xSFP

PRAESENSA



- 8x One-Gigabit ports copper ports
- 4x One-Gigabit SFP ports and 4x one-Gigabit copper/SFP combo ports with SFP sockets for glass fiber transceivers
- Network redundancy via STP/MSTP/RSTP
- Dual power supply connections
- Fault relay

The PRA-ES8E8S is a compact, DIN-rail mounted Ethernet switch. It has eight one-Gigabit copper ports, four one-Gigabit SFP ports, and four one-Gigabit copper/SFP combo ports. This Ethernet switch is an OEM switch made by Advantech for use in Public Address and Voice Alarm systems. It is a preconfigured version of the EKI-7716G-4F4CI switch, optimized for PRAESENSA. The PRA-ES8E8S 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.

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 PRAESENSA systems.

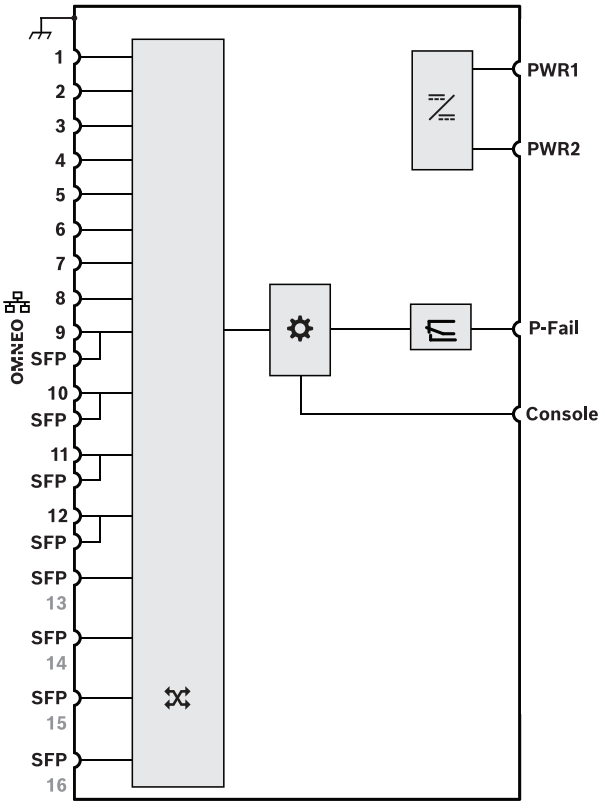
Advanced features

- Managed switch, configurable through web-browser, with eight one-Gigabit copper ports.
- Four one-Gigabit SFP ports and four one-Gigabit copper/SFP combo ports for the single mode PRA-SFPLX and the multimode PRA-SFPSX 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).

Fault tolerance

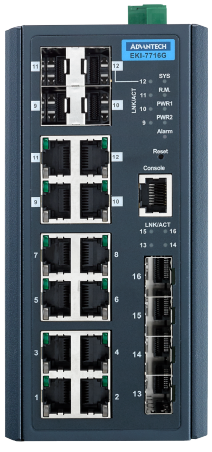
- All ports support RSTP for loop connections to adjacent devices with recovery from a broken link.
- Dual redundant 24 to 48 V DC-inputs.

Connection and functional diagram



	DC to DC converter		Controller
	Fault relay	SFP	Socket for SFP module
	OMNEO network switch		

Front view



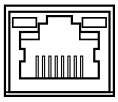
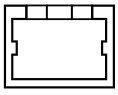
Front panel indicators

Port 1-16 ˄	Link activity	Green
Port 1-16 ˅	100 Mbps network 1 Gbps network	Yellow 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 Link down Power supply missing	Red

Front panel control

Reset	System soft reset or factory reset	Switch

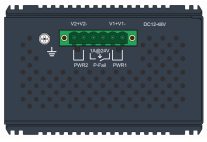
Front panel connections

Port 1-8	One-Gigabit copper port 1-8	
Port 9-16	One-Gigabit copper/SFP comb port 9-12 One-Gigabit copper port 13-16	
Console	Console serial RS232 cable COM port	

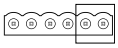
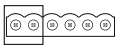
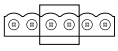
Rear view



Top view



Top panel connections

	Chassis ground	
PWR1	12 to 48 VDC input 1	
PWR2	12 to 48 VDC input 2	
P-Fail	Fault relay	

Architects' and engineers' specifications

The Ethernet switch shall be a managed 16-port switch with eight one-Gigabit copper ports, four one-Gigabit SFP ports and four one-Gigabit copper/SFP combo ports with SFP sockets for glass fiber transceivers. The switch shall have dual redundant, wide-range, DC power supply inputs for 12 V 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 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-ES8E8S.

Regulatory information

Emergency standard certifications	
Europe	EN 54-16
International	ISO 7240-16

Regulatory areas	
Safety	UL 61010
Immunity	EN 55035
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

Installation/configuration notes

This is a professional product that should be installed, used and maintained by trained professionals only.

Parts included

Quantity	Component
1	PRA-ES8E8S Ethernet switch, 8xGbE, 8xSFP
1	Screw connector
2	Wall-mounting bracket
1	DIN-rail mounting bracket and screws
1	Startup manual

Technical specifications

General

Switch type	Managed
Number of RJ45 ports	8
Number of copper/SFP combo ports	4
Number of SFP ports	4
Fault output	Relay
Additional features	Preconfigured for PRAESENSA

Electrical

Power transfer	
Power supply input PWR 1-2	
Input voltage (VDC)	12 VDC – 48 VDC
Power consumption (W), full load	15 W

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

Network interface	
Ethernet type	100BASE-TX; 1000BASE-T
Ports 1-8	RJ45
Ports 9-16	RJ45/SFP combo
Console standard	RS232
Console port	RJ45

Reliability	
Mean time between failures (MTBF) (h)	883378 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
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

Mechanical

Dimensions (H x W x D) (mm)	152 mm x 74 mm x 105 mm
Dimensions (H x W x D) (in)	6.0 in x 2.9 in x 4.1 in
IP rating	IP30
Mounting type	Wall-mounted; DIN-rail
Material	Metal
Weight (kg)	1.30 kg
Weight (lb)	2.70 lb

Environmental

Operating temperature (°C)	-40 °C – 75 °C
Operating temperature (°F)	-40 °F – 67 °F
Storage temperature (°C)	-40 °C – 85 °C
Storage temperature (°F)	-40 °F – 185 °F
Operating relative humidity, non-condensing (%)	5% – 95%
Cooling	Convection

Ordering information

PRA-ES8E8S Ethernet switch, 8xGbE, 8xSFP
Managed 16-port Ethernet switch with GbE and SFP.
Order number **PRA-ES8E8S | F.01U.433.009**

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