EKI-9516 Series

EN 50155 16-Port Managed Ethernet Switch with up to 12 x PoE Ports

Features

- M12 connector with IP67 rugged housing
- Complies with EN50155 & EN50121-3-2
- Up to 12 PoE ports which support IEEE802.3af/at
- Wide nominal power input range: 24~110V_{DC}
- Operating power input range: 16.8~137.5V_{DC}
- Supports X-Ring Pro for rapid and predictable convergence
- Supports IXM for fast and easy maintenance
- Supports N-Key for quick configuration and backup
- Operating temperature: -40 ~ 75°C
- Provides Fast Ethernet & Full Giga Ethernet solution

Introduction

The EKI-9516 series Ethernet switch is designed for railway applications with rugged housing and high EMC performance. The EKI-9516 series is a suitable networking solution for rolling stock and wayside applications. It provides M12 connectors for Ethernet/ console/ relay/ power-input(M23) connections to ensure tight and robust connectivity, guarantees reliable operation against environmental disturbances, and complies with IEC61373 vibration and shock for rolling stock applications. The portfolio of the EKI-9516 series provides different options, catering to various user requirements. It provides 16-ports on different port configuration (please refer to the ordering information). With IEEE802.3af/at PoE functionality (PoE model only), it provides up to a 150 watt power budget (depends on different input voltage, please refer to PoE Total Power Budget) for P.D. devices (such as camera, IP-phone and wireless access point). The EKI-9516 series features IP67 housing and ample pitch connectors that can easily connect/ disconnect cables without interference; reducing human errors within the harsh and narrow industrial environments.

Specifications

Interface

- **Ethernet Port** M12 4pin D-coded Female for Fast Ethernet (10/100BASE-T)
  M12 8pin X-coded Female for Giga Ethernet (10/100/1000BASE-T)
- **Console Port** M12 5pin A-coded Female
- **Relay Port** M12 5pin A-coded Female with 2 relay outputs of 1A @ 24V_{DC}
- **Power Connector** M23 connector

Physical

- **Enclosure** Aluminum Die-casting
- **Protection Class** IP67
- **Installation** Wall Mount
- **Dimension** 254 x 174 x 64.5 mm (W x H x D)

LED Display

- **System LED** PWR1, PWR2, SYS, Alarm, R.M.
- **Port LED** Data, PoE (For PoE model only)

Environment

- **Operating Temperature** -40~75°C (-40~167°F)
- **Storage Temperature** -40~85°C (-40~185°F)
- **Humidity** 5~95% (non-condensing)

Power

- **Power Consumption** 17 Watts (System)
- **Nominal Input Voltage** 24/28/36/48/72/96/110V_{DC}
- **Operating Input range** 16.8-137.5V_{DC}
- **Power Interruptions** Class S2 (10ms) for system and PoE (system only@24V_{DC} input)

- **PoE Total Power Budget**
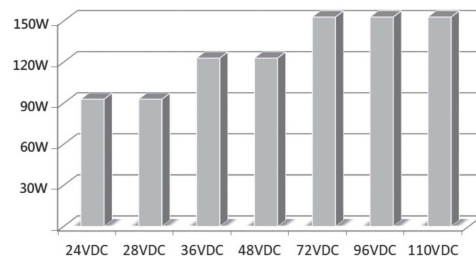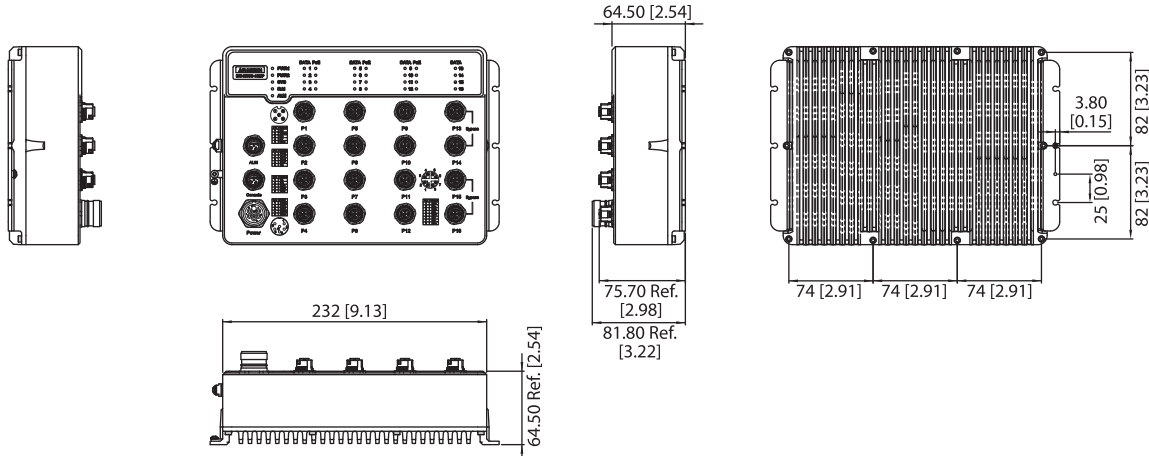

Certification

- **Safety** EN62368-1
- **EMC** CE, EN55011/ 55032/ 55024; FCC Part 15 Subpart B class A
- **EMS** EN61000-4-2(ESD); EN61000-4-3(RS); EN61000-4-4(EFT); EN61000-4-5(Surge); EN61000-4-6(CS)
- **Shock** EN 61373
- **Vibration** EN 61373
- **Railway** EN50155, EN50121-3-2, 50121-1
- **Fire Protection** EN45545-2
- **Other** EN61000-6-4, EN61000-6-2

L2 Feature

- **L2 MAC Address** 8K
- **Jumbo Frame** 9KB
- **VLAN Group** 256 (VLAN ID 1~4094)
- **VLAN Group** 802.1Q, GVRP, GMRP, 802.1ad VLAN stacking
- **Port Mirroring** Per port, Multi-source port (4 Mirroring sessions Max.)
- **IP Multicast** IGMP snooping v1/v2/v3, MLD snooping(256 Multicast Entries Max.)

Dimensions

Unit: mm [inch]

64.50 [2.54]

3.80 [0.15]

82 [3.23]

82 [3.23]

25 [0.98]

74 [2.91]   74 [2.91]   74 [2.91]

232 [9.13]

75.70 Ref. [2.98]

81.80 Ref. [3.22]

64.50 Ref. [2.54]

- **Storm Control** Broadcast, Multicast, Unknown Unicast
- **Redundant Protocol** IEEE 802.1D(STP), IEEE802.1s(MSTP), IEEE802.1w(RSTP), X-Ring Pro, X-Chain, Dual homing, Coupling, ERPS G.8032

Quality of Service

- **QoS Function** Scheduling(STRICT/ WRR), Port Priority, 802.1p, DSCP, IP TOS/ precedence
- **Rate Limit** Ingress/ Egrss Rate limit
- **Max Priority Queues** 8

Security

- **Port Security** Static MAC, MAC violation notice, port-based loop detection
- **Authentication** 802.1x (Port-based, MAC-based), RADIUS, TACACS+
- **Security Pack** IP source guard, DoS attack prevention, DHCP snooping, ARP spoofing prevention, L2/ L3/ L4 ACL (Access Control List)

Management Feature

- **DHCP** Clien, Server, Option66/67/82, Port IP-Binding
- **Access** SNMP v1/v2c/v3, WEB, Telnet, Console, RMON, Standard MIB, Private MIB
- **Security Access** SSH (v2), SSL (v2), HTTPs
- **Software Upgrade** TFTP, HTTP, Dual Image
- **NTP** NTP server/ client, SNTP
- **Other** IPv4, IPv6, Modbus TCP, IXM, N-Key for config file backup/ restore

Accessories

PN		Description
OPT1-M12-CRP-4MD		Phoenix Contact M12 D-code 4 pin Male crimp type connector
OPT1-M12-CRP-8MX		Phoenix Contact M12 X-code 8 pin Male crimp type connector
OPT1-M12-CRP-5MA		Phoenix Contact M12 A-code 5 pin Male crimp type connector
OPT1-M12C-4MD-150R		M12 D-code 4 pin Male to RJ45, cable length:1.5m
OPT1-M12C-8MX-150R		M12 X-code 8 pin Male to RJ45, cable length:1.5m
OPT1-M12C-5MA-DB9		M12 A-code 5 pin Male to DB9 console, cable length:1.5m
OPT1-M23C-6FH-100		M23 Female to 1m cable
1990023703S000		M12 waterproof CAP

Ordering Information

Model name	10/100BASE-T	10/100BASE-T with PoE Function	10/100/1000BASE-T	10/100/1000BASE-T with PoE Function	10/100/1000BASE-T with Bypass Function
EKI-9516E-4GMPW-AE		12 (P1-12)			4 (P13-16)
EKI-9516G-4GMPW-AE				12 (P1-12)	4 (P13-16)
EKI-9516E-4GMW-AE	12 (P1-12)				4 (P13-16)
EKI-9516G-4GMW-AE			12 (P1-12)		4 (P13-16)
EKI-9516E-8GMPW-AE		8 (P1-8)		4 (P9-12)	4 (P13-16)
EKI-9516E-4GMPX-AE		12 (P1-12)	4 (P13-16)		
EKI-9516G-4GMPX-AE			4 (P13-16)	12 (P1-12)	
EKI-9516E-4GMX-AE	12 (P1-12)		4 (P13-16)		
EKI-9516G-4GMX-AE			16 (P1-16)		
EKI-9516E-8GMPX-AE		8 (P1-8)	4 (P13-16)	4 (P9-12)	
EKI-9516E-MX-AE	16 (P1-16)				
EKI-9516E-MPX-AE	4 (P13-P16)	12 (P1-12)			
EKI-9516E-2GMPX-AE	2 (P13-14)	12 (P1-12)	2 (P15-16)		
EKI-9516E-2GMX-AE	14 (P1-14)		2 (P15-16)		