EKI-9516P

Features

- Complies with EN50155
- All Gigabit connections support dual ring protection and non-blocking traffic forwarding
- 12 x M12 Gigabit ports and 2 pairs M12 Gigabit ports with bypass relay function
- X-Ring Pro supports rapid and predictable convergence
- IEEE 802.3at PoE+ to supply 30W power
- IEEE 802.3af PoE to supply 15.4 power
- IEEE 802.3af/802.3at per port with system PoE power management
- Provides M12 connector with IP67 protection
- Operating Temperature: -40 ~ 70° C

Introduction

EKI-9516P M12 Managed Ethernet Switch is designed for railway applications, including rolling stock. EKI-9516P switch uses M12 connectors to ensure tight, robust connections, and to guarantee reliable operation against environmental disturbances, such as vibration and shock. EKI-9516P provides 16 Gigabit Ethernet M12 ports with 12 IEEE 802.3at/af compliant PoE+/PoE ports. The PoE+/PoE switch is classified as power source equipment (PSE) and provides up to 90 watts of power per system, and can be used for IEEE 802.3at/af compliant powered devices (PDs), such as IP cameras, wireless access points, and IP phones. In addition, EKI-9516P provides a wide power input range of 24/36/48 V_{DC}, 72/96/110 V_{DC}; the dual, isolated power input increases the reliability of your communications system. The -40 to 70° C operating temperature and IP67-rated waterproof enclosure allow deployment in harsh environments. EKI-9516P is compliant with the essential sections of the European railway standard EN 50155, EN50121-3-2 covering operating temperature, power input voltage, surge, ESD, and vibration, making the switches suitable for a variety of industrial applications.

Specifications

Interface

- **I/O Port**   16 x 10/100/1000BaseT M12 X-Code
- **Console Port**   M12 A-Code
- **F/W Backup Port**   USB (M12 A-Code)
- **Power Connector**   M23 6 pin

Physical

- **Enclosure**   Aluminum Shell
- **Protection Class**   IP 67
- **Installation**   Wall Mount, DIN Rail (Optional)
- **Dimensions (W x D x H)**   254 x 174 x 64.5 (mm)
- **Weight**   3.6 kg

LED Display

- **System LEDs**   PWR1, PWR2, SYS, CFG, ALM
- **Port LED**   Data, PoE

Environment

- **Operating Temperature**   -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature**   -40 ~ 85°C (-40 ~ 185°F)
- **Ambient Relative Humidity**   5 ~ 95% (non-condensing)

Power

- **Power Consumption**   ~ 26.4 Watts (System)
  ~90 Watts (Power Source Equipment)
  Supports up to 12 ports PoE/PoE+
- **Power Input**   24 / 36 / 48 V_{DC} dual inputs (EKI-9516P-LV)
  72 / 96 / 110 V_{DC} dual inputs (EKI-9516P-HV)
  Supports Overload Current Protection
  Supports Reverse Polarity Protection

Certification

- **EMI**   FCC Part 15 Subpart B Class A
  CE EN55022 (CISPR)
  EN55024 Class A
- **EMS**   EN61000-4-2 (ESD); EN61000-4-3 (RS); EN61000-4-4 (EFT); EN61000-4-5 (Surge); EN61000-4-6 (CS)
- **Shock**   IEC 61373
- **Freefall**   IEC 60068-2-32
- **Vibration**   IEC 61373
- **Rail Traffic**   EN 50155; EN50121-3-2
- **Patent**   http://www.advantech.com/legal/patent

Dimensions

Unit: mm
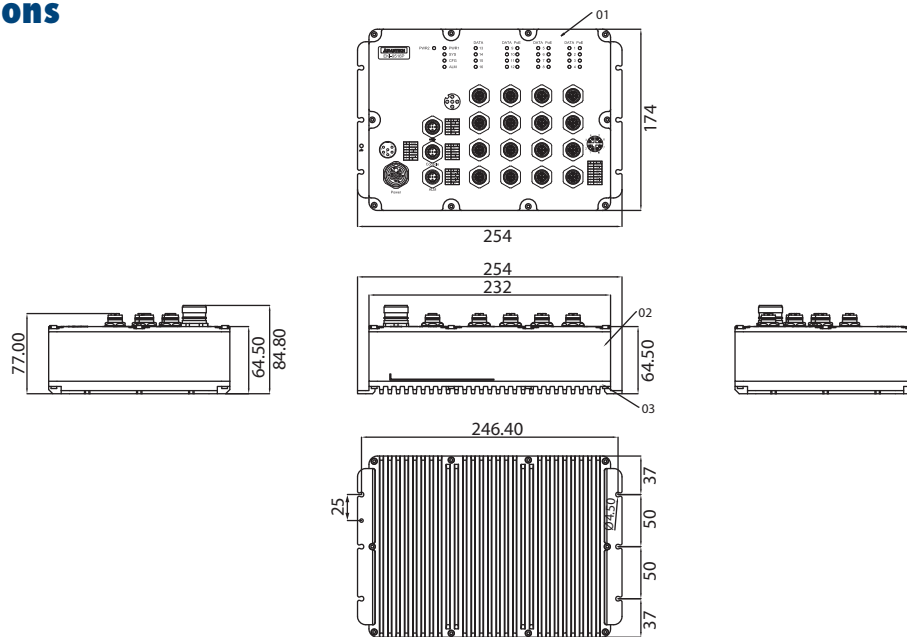
L2 Features

- **L2 MAC Address** — 16K
- **Jumbo Frame** — 9KB
- **VLAN Group** — 4093 (VLAN ID 1~4093)
- **VLAN** — Mac based VLAN, Protocol based VLAN, IP subnet based VLAN, Port based VLAN, GVRP
- **Port Mirroring** — Per port, Multi-source port
- **IP Multicast** — IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate leave
- **Storm Control** — Broadcast, Multicast, Unknown unicast
- **Spanning Tree** — IEEE 802.1D-STP, IEEE 802.1s-MSTP, IEEE 802.1w-RSTP, X-Ring Pro

QoS

- **Priority Queue Scheduling** — WRR (Weighted Round Robin), SP (Strict Priority)
- **Class of Service** — IEEE 802.1p based CoS, IP TOS, DSCP based CoS
- **Rate Limiting** — Egress Rate limit, Ingress Rate limit
- **Link Aggregation** — IEEE 802.3ad Dynamic Port Trunking, Static Port Trunking

Security

- **Port Security** — Static, Dynamic
- **Authentication** — 802.1x (Port-Based), RADIUS, TACACS+
- **ACL** — 550 rules
- **Advanced Security** — IP Source Guard

Management

- **DHCP** — Client, Server, Relay, Option 66/67
- **Access** — SNMP v1/v2c/v3, WEB, Telnet, RMON, Standard MIB, Private MIB
- **Security Access** — SSH 2.0, SSL
- **Software Upgrade** — TFTP, HTTP, Dual Image
- **NTP** — NTP client

Ordering Information

- **EKI-9516-P0IDL10E** — 16 x M12 Managed Ethernet Switch with PoE/PoE +, including 24/36/48 VDC dual power inputs
- **EKI-9516-P0IDH10E** — 16 x M12 Managed Ethernet Switch with PoE/PoE +, including 72/96/110 VDC dual power inputs